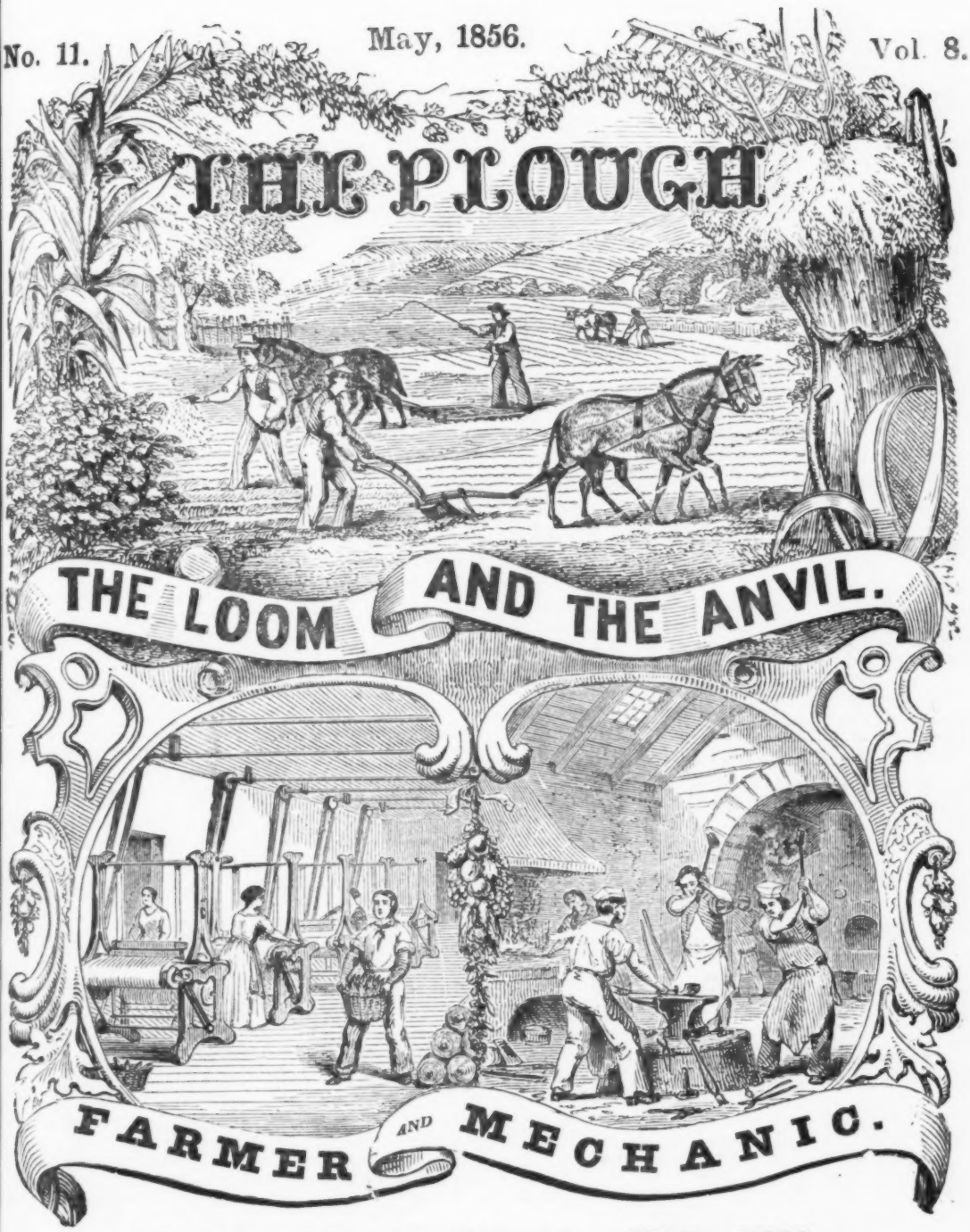
No. 11. May, 1856. Vol. 8.



CONTENTS OF NO. 11.—VOL. VIII.

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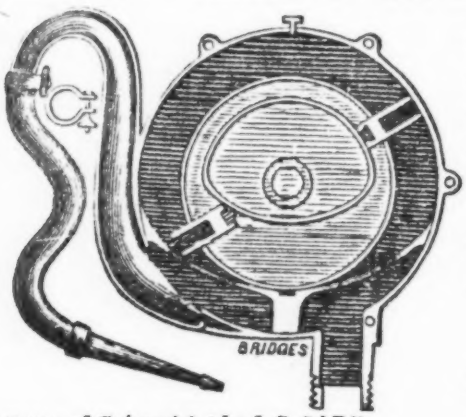
AGENTS FOR THIS JOURNAL.

The following persons are authorized to act as Canvassing and Collecting Agents for this Journal: S. D. ALLEN, and MOORE & ATKINS, of this city; JAMES DEERING, of New-Orleans, La.; MARK HASKELL, of Amherst, Mass.; and L. PEASE, of Boston.

A. W. CARY'S ROTARY FIRE-ENGINE PUMPS.



corner of Gréenwich,) by J. C. CARY.
Sept. 18–1y.

THE Inventor, after thoroughly testing this engine pump, for the past two years, feels confident that it is not equalled by any thing now in market, in the way of raising or forcing water; the motion being rotary, the stream is constant, without the aid of an AIR vessel. The packing is self-adjusting, very durable, and can not well get out of order.

These pumps are well calculated for all the purposes for which pumps or hydrants may be used, viz., Factories, Steamboats, Tanneries, Breweries, Distilleries, Railroads, Water Stations, Hotels, Mines, Garden Engines, &c.

Among the many testimonials given of this pump, is a gold medal awarded at the last great Fair of the American Institute.

No. 1 is a house or well pump and domestic Fire Engine, and will raise from 20 to 30 gallons per minute.

No. 2 will raise 100 gallons at 120 revolutions.
No. 2½ " 200 " 120 "
No. 3 " 300 " 120 "

The quantity raised can be doubled, by doubling the revolutions. These machines are manufactured and sold by the subscribers at Brockport, N. Y.; also in this city, 240 Broadway.

CARY & BRAINERD.

SPRING CLOTHING.

ALFRED MUNROE & CO.,

DEALERS IN FINE AND FASHIONABLE

CLOTHING FOR MEN AND BOYS,

441 Broadway (between Howard and Grand Sts.), **New-York,**

Invite special attention to their assortment of **Ready-Made Clothing,** suitable for the present and coming season. Their assortment embraces every variety of goods suitable for a

GENTLEMAN'S WARDROBE.

No pains is spared in this establishment to have every garment well made, and well and appropriately trimmed. The assortment and styles of **BOYS' CLOTHING,** challenge a comparison with those of any other concern in the United States.

☞ **ONE PRICE ONLY FOR GOODS—NO DEVIATION.** ☜

If any dissatisfaction arises after the purchase of an article, it may be returned and exchanged, or the money will be cheerfully refunded.

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ORGAN HARMONIUMS, and MODEL MELODEONS,

Made by MASON & HAMLIN, Boston, Mass.

The following are extracts from the opinions of several leading musicians and organists who have seen and examined them:

"They are decidedly superior to any others with which I am acquainted."—LOWELL MASON.

"The most satisfactory result of reed appliance that has come under my observation."—GEO. JAS. WEBB.

"Superior to any that I have yet examined."—GEO. F. ROOT.

"You are certainly producing Melodeons which in all desirable characteristics are, so far as I can perceive, faultless."—WM. B. BRADBURY.

"By far the best and pleasantest-toned reed instrument which I have ever seen."—WM. MALON.

"Very much superior to any reed instrument which I have ever seen, either in this country or in Europe."—GUSTAVE SATTER.

"I have no doubt that your 'Organ Harmonium' will, as it deserves, be brought into general use in our churches."—B. F. BAKER.

"They far exceed the expectations I had formed, in tone, finish, and mechanism."—JOHN H. WILCOX.

"In every respect they are far superior to any thing I have ever seen of the kind, either in Europe or America."—GEO. WASHBOURNE MORGAN.

"I have never seen a reed instrument so effective as your 'Organ Harmonium.'"—HENRY STEPHEN CUTLER

"They far surpass all other instruments of the kind which have come under my observation."—C. ZERRAHN.

"The *ne plus ultra* of reed instruments."—G. W. PRATT.

"In my opinion they have not been equalled by any manufactured."—S. A. BANCROFT.

"Far in advance of any Melodeon I have ever before seen."—W. R. BABCOCK.

"They are the most perfect instruments of the kind manufactured, so far as I know."—EDWIN BRUCE.

"I do freely and cheerfully admit it is the best I have seen."—R. D. MCARTHUR.

"Far superior to any I have ever seen."—W. F. SHERWIN.

Mr. W. B. Bradbury, the distinguished composer and musician, thus gives a general answer to the numerous inquiries received by him, regarding organs, etc.

"I have received several letters of late, asking my advice about organs for small churches—organs worth from three to seven or eight hundred dollars. I am fully of opinion that the 'Organ Harmonium,' made by Mason & Hamlin, of Boston, is in every respect a most desirable instrument for the church. In purity of tone, variety and POWER, it seems to me preferable to any organs that I have seen costing double the money."—[*See N. Y. Musical Review of Jan.* 26.

Price of Melodeons, from $60 to $200 | Price of Organ Harmonium, $350

☞ Before concluding a purchase of Melodeons please send for our circulars, which will be forwarded to any address free, on application to the undersigned. Sole Agent in New-York, S. T. GORDON, 297 Broadway.

MASON & HAMLIN, Cambridge-st. (corner of Charles), **Boston, Mass.**

The Plough, the Loom, and the Anvil.

Vol. VIII. MAY, 1856. No. 11.

AMERICAN MANUFACTURES.

We took occasion in our last number to present our views in relation to the movement of the New-York jobbers of iron-ware. We are persuaded that our position is the only one tenable by any man who pretends to advocate the encouragement of home industry. If our only object is to heap up money in our own coffers by importations from abroad, or if it is proposed to do so by swindling in any of the fashionable modes of amassing wealth, now so common, which have no regard for the common welfare, or for the progress of the nation in power and wealth, then this movement might be satisfactory. But to say to the intelligent and skillful mechanics of this great country "you shall not affix your name, and above all, your location, on any of the products of your hands"—is the coolest piece of brazen impudence we ever saw in print over respectable signatures. And even now we can scarcely believe it the work of those whose names are signed as approving the movement.

But our object is not now to repeat what we then wrote. The longer we reflect upon this movement, the more induced we are to use stronger terms of disapprobation in reference to it. It is, however, a much more pleasing duty to turn to our own skillful artists and manufacturers, and to show forth the very honorable position they have secured among their fellow-producers the world over.

"Who reads an American book?" is a taunt, the malignity of which is forgotten in the utter contempt which universally attaches itself to one who indulges in such foolish language. As a matter of fact it is probably the few Americans, of the type of those who contrived this vain attempt to govern our intelligent manufacturers, and who led more worthy men to adopt it, without considering what it involved, it is probably these men who never "read an American book," nor any other; but who live only to fatten on the spoils of all whom they can fleece. We are sorry that so many highly respectable men have been drawn into such a net by such men.

The same taunt used to be thrown off, very flippantly, in reference to American manufactures, and the generation of those who prize a thing chiefly because it is foreign, is not yet extinct. We wish some foreign operator would take these persons under their care for a while and mend not only their manners, which often are sadly in fault, but their intellects and their tastes, teaching them the true mode of determining merit, and the way in which even themselves can become useful and honored members of community. But if we allow ourself to dwell on this matter we may be tempted to write what we should regret. We are sure it is safe ground on which we enter.

There are but few departments in mechanic art, in which we do not occupy an eminent position.

In some of the more expensive and merely ornamental, we are content to follow. It is well, perhaps, here *only* to imitate. French milliners are probably gifted by nature, with the faculty of painting butterflies and scenting roses and orange flowers more "charmingly," than our own more matter of-fact, utilitarian wives and daughters. We doubt whether any body, but these and their few kindred that, by accident, were born under some other firmament, would ever attempt the highest flights in those curious realms. Let them have full scope.

But the moment you enter upon *real life*, upon the catalogue of those pursuits that dignify and improve, you find our own country among the foremost.

From Collins through the whole fleet of structures of all names and sizes, that float on the water, down to the smallest bark canoe, we at least, when we regard actual achievements, have no cause to be ashamed of ourselves. If we turn to what we ought to have done, and might have done, with proper encouragement and protection, we may find occasion for self-reproach and censure. If we look to our Lowells and Lawrences, and Manchesters, another immense vista opens, which in any community would inspire pride and satisfaction. Go through Pennsylvania, and note her mighty products, that provide so abundantly for the comforts of our entire people for the larger half of year, and visit her furnaces and forges, and kindred forms of industry, and if you are not amazed at what has been done, it will only be because you wonder more at the folly which has refused to them that kind of patronage which would have placed the products of that great State far above and beyond those of any like region in the globe.

But life is made up chiefly of little things, and the arts that do so much to make men happy and efficient are mainly much less imposing in their forms. We are not certain that a learned and very discreet friend of ours, was not right, when, some twenty years ago, he remarked to us that the invention of friction matches had done more for domestic comfort than any other invention of the age. It is true, undoubtedly, that some of the most unpretending and unattractive contrivances which daily come into use in every family, are eminently among the *essentials* of an intelligent, progressive community.

Hence it is that the man who contrives an improved cooking utensil, an improved range or stove, a new and useful and safe light, better pots and kettles, improved wares, whether of clay, or iron, or wood, tasteful or useful furniture, &c., &c., tells directly upon the comforts of millions, and adds essentially to the happiness of a whole people. What a change has been wrought out in the habits of nations by the invention of a metallic pen! So humble a matter as an envelope, how it has changed old ways, and brought about new forms and fashions.

But we intended only write an introduction to something else, while it will prove far more pretentious, in volume, than that to which it was designed to lead. We hope it may not, however, be destitute of interest, and may deepen the conviction of the reader as to the importance of the policy we contend for, towards various industrial pursuits.

Leaving the path into which we have been beguiled, by the inspiration of the moment, we desire to turn the attention of our readers to the progress that we have made in certain departments of useful industry.

POCKET AND TABLE CUTLERY—NEW YORK KNIFE COMPANY.

Those who have not examined these useful implements are by no means aware of the perfection to which this art has been advanced in this country.

With all implements, in the manufacture of which each piece demands a large amount of individual labor, that machinery cannot do, the cheap labor of Europe has heretofore affected very materially the success of American artists. So in cutlery, it has not been found possible to afford the jobber so great a profit on these goods as he is able to obtain upon imported articles. Hence their influence has not been in favor of domestic manufacture, but they all favor the sale of foreign cutlery.

But go into almost any respectable store where these articles are for sale, and among the handsomest and finest of the entire stock, are American knives. They are made in various places, and of various qualities. We are not able to give the location of many of these. We remember some years ago to have seen some fine pieces of table-cutlery from an establishment in or near Greenfield, Mass. But our memory does not enable us to speak definitely in relation to them. We are, however, enabled to state with entire assurance, in relation to the wares of

THE NEW-YORK KNIFE COMPANY, MATTEAWAN,

in this State. Some specimens of their manufactures were lately shown us, which would compare favorably with the very best English knives, and in answer to our inquiries, we learn the following facts:

The construction of this company is peculiar, and affords a satisfactory assurance that they must be successful. Every member of the company, or stockholder, is a skillful artizan, and nearly or quite every artizan is a stockholder. They are all Englishmen who have wrought in the best shops in Sheffield. They are men with families, having a permanent home in their adopted country, and are surrounded with every inducement to do all that industry and art can do, to insure success. That success they appear already to have achieved.

The company was formed by those enterprising men, on a very liberal foundation, but without cash. Scarcely five hundred dollars could be raised from the whole number. But by saving one-half their earnings, for two or three years, they have created a large capital, and are free from embarrassment.

Companies or individuals who will achieve such triumphs, are sure of success. It is indeed, as we have stated, already achieved. It is a prosperous company, a company deserving the patronage of our entire American people, as well for what they are themselves, as for the character of their work. They do honor to their adopted country. May no shadow ever darken their prospects. We are informed that every blade which they manufacture is STAMPED "New-York Knife Co., Matteawan." May all our retailers and purchasers, learn the exact position (in Duchess county) of that locality. They employ forty-seven hands, mostly men, and have a capital of about $20,000. They use an engine of 12 horse power. They produce about $3000 worth of cutlery per month. They have been organized about four years.

The position of importers, as already explained, towards these artists, deprives the company of the benefit of their influence, and hence they are obliged to find a market for themselves. This they do without difficulty. Their agencies cost no more than the jobber would demand for his commission, and wherever they exhibit their goods they make ready sales.

We have also seen and examined the goods of another of these numerous centers of wealth and industry, which our importers and jobbers would like to exterminate, and which are scattered all over our country. We refer to the

BRUSH FACTORY, LANSINGBURG, N. Y.

This is carried on by Messrs. Cross & Hoyt, whose warehouse is in Pearl st., in this city. The commencement and progress of this establishment, like that just described, is so illustrative of enterprise and perseverance, that we present it to our readers with some detail:

They commenced business in the year 1835 in a very small way, being all apprentices in the same shop, and subsequently journeymen, for some three years; and afterwards formed a co-partnership consisting of James Cross, John Moss, and Joseph Hoyt, under the style of Cross, Moss & Co. They hired a small shop and commenced in a small way, (doing the most of their work themselves,) in which they continued for a year or two. Mr. Cross then purchased a house and lot and built a small shop on the rear part of the lot, the village being laid out in streets and alleys; the said shop was in dimensions 25 by 13 feet, two stories high, in which they did their work for some time. Some of the old establishments at that time having been in business for several years, and being jealous of them, prophecied an existence of just six months. But the evil prophecied did not occur. Now they have an establishment only second in the country. Their factory building is 100 feet by 24, with two wings attached 50 by 18 feet—all three stories high, with cellar, wash-house, and bleach-house. They have a steam-engine of about fifteen-horse power, which moves machinery with which they do much of their work, such as sawing, boring, etc., etc. They use all kinds of wood in the business, as Rose, Satin, Mahogany, Maple, Birch, and Oak. The fancy woods come from South America and Brazil.

Of Bristles, they use more than 30 different kinds, varying in price from 35 cents per lb. to $3 50, according to quality. Those come mostly from Russia, and are the best in the world; some from Prussia, Poland, Germany, and France. There is also a large quantity packed at the West; at Cincinnati, Louisville, and other places.

They now keep about 30 men employed in the shop, and 25 boys, and some 80 women and girls. The men do the sawing, boring, planeing, etc. The boys do what is called drawing, that is, putting the bristles in the holes. This is effected by doubling wire and drawing it into the hole. They do the coarse work; the women draw the fine work, such as hair and hat brushes, etc.,—taking the work to their houses, while the boys and men work in the shop. The coarse work is all drawn in, one knot at a time, and is cut off, every row, as it is drawn, by large shears made for the purpose, which are screwed down on the bench, with blades 10 to 12 inches long and 3 inches wide. They cut it off generally with one cut, having a guage secured on one blade by which the whole brush is cut at the same length. They can turn out $150,000 or $200,000 a year, but the business will not yet admit of doing so much. Their sales however are increasing constantly.

Their varieties of work consist of the following kinds, viz.: Hair, Clothes, Tooth, Nail, Shaving, Shoe, Scrubbing, and Horse Brushes; also, Whitewash, Pain, Sash, Varnish, flat and oval Graining Brushes; also, Marking and Dust Brushes of every style and price. They make more than 250 kinds of styles of hair brushes alone.

Enterprise such as we have here described, deserves success. All these artizans are now reaping the fruits of persevering toil and industry under darker skies. We trust a constant sunshine will henceforth lighten their way to a happy and prosperous old age.

SENECA FALLS, N. Y.

[CONDENSED FROM HARDWAREMAN'S NEWSPAPER.]

This village affords a remarkable illustration of the beneficial influence of manufactures upon the public interests, as well as of the wealth and comfort and independence which are attainable through the same channel, to individuals, by the exercise of perseverance, energy and industry. It is most conspicuous for its success in the manufacture of iron.

1. Boat Building.—Although, from temporary causes, this business is not now in active progress, yet it has been a most important and profitable one to the village—having given a great deal of employment, and produced a great deal of wealth. I have heard that the boats built at Seneca Falls are accounted the best on the canal; and, with the characteristic energy of the inhabitants, I presume they will not abandon so valuable a branch of manufactures, but will engage heartily and vigorously in the improved style of boats which are now in requisition. But whatever may be the future of this branch of industry, it is certain that in the past it has largely contributed to the substantial advancement of the village.

2. Woolen Mills.—One very extensive, the other smaller.

3. Sash and Blind Factories, of which there are two—one being the largest, and perhaps the best appointed in the United States.

4. Grist Mills.—The tremendous water power existing here is largely used for the manufacture of flour. There are eight mills, having sixty run of stones! The vast consumption of wheat by these concerns is chiefly supplied by the west over the canal.

5. Hay and Manure Forks, of Hines' Patent Wire, are largely manufactured by Messrs. Gould, Henion & Co. This enterprising firm have lately considerably increased their capacity of production, and are now in a position to execute very large orders.

6. But the leading manufacture of the place is of Iron, and chiefly consists of the article of Pumps, although some other goods are manufactured to a great extent. There are here three extensive Pump Factories, beside two Foundries and Machine Shops. There are employed in these factories four and five hundred hands, and the value of the goods they produce is not less than half a million of dollars annually. They melt from 16 to 20 tons of iron per day—which, it is to be remembered, it mostly run into light and fine castings—and show every symptom of increasing their production.

In 1849, Messrs. Cowing & Co., produced about 60 pumps a week. In 1855 they produced about 600 pumps a week; and now they can make at about the of rate 175 per day, or 1,045 pumps per week!

Nor is their trade confined to Cistern Pumps. Their Deep Well and Force Pumps are amongst the very best and most perfect in the world. They are also manufacturing a very cheap and efficient Fire Engine, of which last year they made and sold 30; and they have recently gone very extensively into the manufacture of Thimble Skeins and Pipe Boxes, the demand for which is now becoming so wide spread and extensive. They employ constantly over one hundred men, keep in constant use about 30 lathes, melt every week nearly 30 tons of iron, and one ton of brass and copper, besides the large quantity of wrought, which they use in the mounting of their pumps.

Such is the result of fifteen years' manufacturing to this village, as yet so

little known or spoken of. What would it be if it were left entirely dependent on "agricultural resources?" its population driven for employment to other places—its merchants bankrupt—its mighty water power unemployed! It would add another to the many proofs which New-York even now furnishes, that agriculture alone is not sufficient to employ the power, elevate the condition, and produce the wealth of a nation.

THE INDUSTRY OF CANADA WEST.

THE following lucid statements were sent to this office months since by our valued friend and correspondent, Mr. Robert Howell. But as it required copying before it could be placed in the hands of a compositor, it was given out for that purpose, and by accident was not returned till very recently. We now publish it, with the exception of statements regarding the tariff in Canada, which we believe have been changed since this was written.

ED. P. L. & A.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

THE traveler on the public road from Hamilton, C. W., to Brantford, will notice the large amount of pine timber in almost every direction. This pine is generally of large size, and of good quality. The steam mill is seen here and there sending up its cloud of smoke, especially on the government road from Paris to Hamilton. Water-power is scarce in these sections, streams being few and small. The price at Gault for common pine lumber is $13 per thousand feet, although I was assured by a large lumberman that his would average from 30 to 35 thousand or a hundred thousand of common. Such lumber would command $20 at Port Deposite. A great amount of lumber has been wasted here. Large extent of dry woods is seen in every direction.

The revenues and expenditure of the upper and lower provinces of Canada, from the parlimentary documents were as follows: The gross revenues in 1841, was £343,829 12s. 11d.; the expenditure for the same year was £291,393 11s. 7¾d.; In 1845, gross revenue, £703,447 3s. 8¾.; expenditure, £1,013,176 16s. 9d.; revenue 1851, £842,184 5s. 2d., and expenditure for the same year only, £634,666 6s. 8d.; the imports from Great Britain in 1850, were £2,407,989 4s.; in 1851,£3,012,033 2s. 6d.; from Br. N. American colonies, 1850, £96,404 19s. 6d.; and in 1851 £109,242 16s. 1d. *The Imports* from British W. Indies, 1850, £1,112 19s. 3d.; in 1851, £3,406 7s. 4d.; from the United States in 1850, £1,648,715 2s. 5d.; in 1851, £2,091,441 6s. 3d.; from other foreign countries in 1850, £91,303 18s. 4d. and in 1851, £142,574 0s. 5d. TOTAL IMPORTS 1850, £4,245,517 3s. 6d.; in 1851, £5,358,695 12s. 7d. The Exports of Canada in 1850, to Great Britain, £1,521,279 15s. 3d.; in 1851, £1,921,900 6s. 4d.; to Br. N. A. Colonies in 1850, £202,194 9s. 3d.; in 1851, £259,379 12s. 7d.; to Br. W. Indies in 1850, £2,094 0s. 0d.; in 1851, £978 0s. 0d.; to the United States in 1850, £1,237,789 17s. 11d.; in 1851, £1,017,886 3s. 3d.; to other foreign countries in 1850, £27,070 6s. 4d.; in 1851, £41,036 1s. 7d. TOTAL EXPORTS in 1850, £2,990,128 0s. 9d.; in 1851, £3,241,180 3s. 9d.

According to official report, Canada West contains 31,745,535 acres. By the census of 1852 it numbered 952,004 inhabitants. The province produces an annual amount as follows:

Wheat,	12,692,852 bush.	Potatoes,	4,987,175 bush.
Barley,	62,575 "	Other Roots,	229,121 "
Oats,	11,193,844 "	Butter,	15,978,315 lbs.
Buckwheat,	631,384 "	Cheese,	2,226,776 "
Maize,	1,606,513 "	Hay,	681,682 tons.
Peas,	2,891,503 "	Number of Horses,	203,300
Rye,	479,651 "	Neat Cattle,	745,894
Turnips,	3,641,942 "	Sheep,	968,022
		Swine,	484,241

Canada West raises three times the quantity of wheat raised by all the rest of British America; of barley, her produce falls short of that of Canada East by a few thousand bushels of oats. Canada West produces as much as all the rest of British America, of maize, peas and rye Canada W. produces more of each than all the rest of the provinces, of buckwheat, Canada W. produces a few thousand bushels more than Canada E., and a few thousand less than New-Brunswick. Canada East produces more hay than Canada West, but the Eastern province produces more potatoes and twice as many turnips than all the rest of British America, while of butter it (C. W.) produces more than all the other provinces by several millions of pounds, and of cheese, she produces more than three times as much as the rest of the British provinces. She raises many more neat cattle, sheep and swine, than all of the other provinces, but fewer horses than Canada East.

JOINT STOCK COMPANIES IN MASSACHUSETTS.

The Secretary of State reports that there are filed at his office the returns of ninety-three joint stock companies organized under the General Corporation law of Massachusetts. The total capital stock of these companies is $5,698,700, and the amount paid in is $3,340,307 70. The company having the largest capital is the Lawrence Machine Shop, $750,000, which, at the time the return was made, had but $320,000 taken up, the shares being $50 each. The North American Patent Boot and Shoe Company (of whose location no report is given) has a capital of $300,000, but none of it has been paid in. There are seven companies with a capital of $200,000 each, but in the case of the Tremont Oil Company, Boston, none of the capital is reported as paid in. The Cheshire Glass Company, Cheshire, has $60,000 out of $200,000 paid in, and the Union Iron Works, North Adams, $81,000. The others are the Merrimac Lumber Company, Lowell; Boston Oil Company, Boston; North American Verd Antique Company, (since dissolved); and S. P. Ruggles Power Press Company; whose capital is all paid up.

The list of corporations includes a great variety of business, such as the American Book and Paper Folding Company, Boston, ($36,000 paid in); American Grist Mill Company, Boston, ($25,000 paid in); Leather Splitting Company, ($4,500 out of $50,000 paid in); Machine Stamp Company, ($7,500 out of $25,000 paid in); Rattan Company, Fitchburg, ($31,200

paid in.) Then there is a Soda Fountain Company, at Haverhill; Stereotype Company, at Boston; Whip Company, at Westfield; Iron Companies, Acid, Manufacturing Companies, Carpet, Earthenware, Flax, Papier Mache, Sugar Refining, Shoe, Coal (at Bristol), Glass, Piano Forte, Rubber (at Edgeworth), Tanning, Foundry and Machine, Straw, Gas Light, Tool, Chair, Comb, Wire Fence, Shovel, Marble, Jewelry, Steam Drill, Persian Sherbet (in Boston with $12,000 paid in out of $32,000), Woolen, Patent Leather, Leather Splitting Cutlery, Tacks, Glass Engraving, Brick and Ice do.

The capital stock of thirteen Companies is under $10,000 each, the lowest being $5,000. The Comb Company at Holliston, has a capital of $50,000, or 500 shares at $100 each, all paid in. The Boston Flax Mills, at Braintree, has a capital of $50,000, all paid in. The Boston and Salem Ice Company, located at Lynnfield, has $34,946 20 paid in out of $50,000 capital. Of the very large capital engaged in the manufacture of Piano Fortes in this State, but $40,000 is invested under this law, viz, by Brown & Allen's Piano Forte Company, Boston.

BATSTO FARM AND AGRICULTURAL COMPANY.

A HOME FOR ALL.

THE Company announces the following plan. It certainly commends itself to the notice of those of small means living in or near Philadelphia. This Company has purchased a large tract of land, within one hour's ride of Philadelphia and adjoining the Weymouth Farm and Agricultural Company's land, comprising about thirty thousand acres, known as the "Batsto Tract," and situated in Atlantic county, New Jersey, between Mullica river (which is navigable five or six miles along its northern boundary for vessels of seven feet draft,) and the Camden and Atlantic Railroad; the former affording an outlet to New-York, the latter to Philadelphia, two markets that would absorb all the produce which this fine tract could raise.

"The tract is divided into twenty acres each; each farm fronting on a main road thirty feet wide, at an average value of ten dollars per acre, which is payable in weekly instalments of one dollar.

"One share will entitle the holder to a farm of twenty acres, besides a gratuity of four town lots, twenty feet front by one hundred feet deep, two in the Camden and Atlantic Railroad and two at the junction of the Air Line Railroad and Mullica river.

"Half shares will entitle the holder to a farm of ten acres, besides a gratuity of two town lots as aforesaid.

"The timber and wood will be moved from the tract, (except what the stockholders may desire to purchase,) the roads and streets opened, and the deeds made out and delivered, *without any expense* to the stockholders, which will enable them, immediately after the distribution to commence working their farms, and at the same time afford them ingress and egress to and from them over good roads.

"Hence it will be seen that what would be equivalent to a merely nominal rent of *fifty-two dollars a year for twenty acres of land, for four years*, would pay the purchase money, and entitle the holder to a deed in fee; whereas, if

he should lease the land for four years, at the end of that time, he would have paid four times the amount in rent, and have no more right to the land than when he commenced.

"The 'Air Line Railroad' from New-York to Cape May, which is now located and under contract, and which forms a junction with the Camden and Atlantic Railroad on this property, being the shortest route from Philadelphia to Cape May by twenty miles, will give this tract a railroad front of twenty miles, increasing immeasurably the inducements to embark in this enterprise."

EXTRACT OF THE ANNUAL ADDRESS

BEFORE THE ALABAMA STATE AGRICULTURAL SOCIETY,

DELIVERED BY HON. C. C. LANGDON, OF MOBILE.

I beg, however, to tell the representatives of the people, that *something must be done*. I proclaim it here, in their presence, at the very door of the capitol, and in the presence of this vast and enlightened auditory, something must be done for the advancement of our State. She is lagging behind, far, far behind, all her sisters in the march of improvement, and every moment of inaction is placing her farther and still farther backward. Georgia, noble, enterprising Georgia, justly styled the "Empire State of the South," is tapping our eastern borders at points with her railroads—yea, even penetrating our center—and drawing from us products and trade that should and would, were the right policy to prevail, find their way to the commercial emporium of our own State. Savannah and Charleston are reaping the rich fruits of the wise and liberal policy of Georgia and South Carolina, in a largely increased and rapidly increasing population, and the rapid accumulation of wealth, while our own cities are neglected and suffered to decay, and our great works of internal improvement are permitted to struggle with adversity, to languish, to die. And yet, those in authority, with the strangest and most unaccountable indifference, sit quietly by and view the scene of ruin before them, without thinking of a change of policy, without one effort to save the State from the ruin that impends. And why is it so?

Ah, say you, all this sounds very well, but *the State is in debt*, and, until that burden is removed, it would be bad policy for the State to appropriate money, loan its credit, or extend aid in any form, to any enterprise, however meritorious it may be. The State debt is the barrier to all improvement. *The State debt!* Why, gentlemen legislators, do you expect to pay that debt by driving trade and commerce out of the State? by closing up all the avenues of prosperity, and permitting the State to go to decay and ruin? by depriving your people of the means of employment, and forcing men out of the State? What constitutes a State? Is it not *men?* 'Tis man, laboring man, with his stalwart arm and stout heart, and a soul inspired with that energy and strength which a consciousness of his position as a *freeman* can alone impart—man, proud, free, intelligent, laboring MAN—this, it is, that constitutes a State, gives it its strength, its power, its wealth, its renown. Adopt that policy, then, which shall fill your State with men. Thousands of acres of land now lie within your borders in a state of nature, unculivat-

ed, simply for the want of facilities for the transportation of its products to market. Build your railroads, and these lands will be brought into cultivation, and be covered with men. There are thousands of acres, again uncultivated, though convenient to market, simply because not adapted to the cultivation of cotton, under the mistaken impression, that no other agricultural product can be cultivated to advantage. Dispel this illusion, convert these wildernesses into gardens, and orchards, and fields of waving grain, and they will become a nursery for men. Mines of wealth lie imbedded in the earth, and all that is wanted to draw it forth from its hiding place, is men, with the will and the energy to do. You have facilities for manufacturing equal to any State in the Union—water power, the raw material, whether of cotton, wood or iron, and the men to labor. Would you then pay your State debt? Adopt that policy that will bring your waste lands into cultivation, and develop your vast resources. Build your own ships, your steamboats, your locomotives, your railroad cars, and your engines. Your forests will furnish you with the best of timber, and the earth on which you tread, with the iron and the coal. Push forward your railroads. Connect North and South Alabama—the waters of the Tennessee with those of the Gulf—and bind the two sections together with iron bands. The capital of your State must be united with your commercial emporium by railroad; and that magnificent enterprise, which is to connect the great West with your own beautiful city on the Gulf, must be urged onward to a speedy completion. These great works completed, and Alabama will enter upon a new career of existence.

[This is excellent, in matter and manner. A few living energetic men like Mr. Langdon, have the power, if they would but exercise it, to regenerate a State, even though it were the most inefficient in the Union.

Ed. P. L. & A.

FACTS IN RAILROAD MANAGEMENT.

The following facts regarding eight of the principal railroads of Massachusetts are developed by the reports to the Legislature, and furnished by a non-stockholder:

1. The cost of passenger transportation is 1.062 cents per passenger per mile.

2. The cost of merchandise transportation is 3.095 cents per ton per mile.

3. In passenger transportation $41 98 per cent of the receipts therefrom are absorbed in expenses.

4. In merchandise transportation $89 52 per cent of the receipts therefrom are absorbed in expenses.

5. The expenses of railroads are almost invariably determined by the weight carried over the rails. For instance: The Eastern road, upon which passenger traffic predominates, is operated at an expense of $3,670 per mile of the length of the road; whilst the Lowell, upon which merchandise traffic predominates, is operated at an expense of $12,478.

6. The cost of renewal of iron upon railroads is an infallible index of the magnitude of expenses. For the preceding reasons, the cost of that item on Eastern road is but $390 per mile of the length of the road, while upon the Western it is $1,390.

7. Of the expenses of railroads, thirty per cent. are absorbed in maintenance of way, or road bed; twenty per cent. in fuel and oil; twenty per cent. in repair of engines, tenders and cars; ten per cent. in special freight expenses, and the remainder in passenger, incidental and miscellaneous expenses.

8. The weight of the engines, tenders and cars upon passenger trains is nine fold greater than the weight of the passengers.

9. The weight of the engines, tenders and cars upon freight trains, is scarcely one-fold greater than the weight of the merchandise.

10. For cheapness, railroads cannot compete with canals, in transportation of heavy descriptions of merchandise; the cost of carrying merchandise upon the Erie canal ranges from two to sixteen miles per ton per mile; whilst upon several of the principal railways of New-York and Massachusetts the cost of carrying merchandise ranges from thirteen to sixty-five miles per ton per mile.—*Boston Post.*

BALTIMORE AND OHIO RAILROAD.

[A CORRESPONDENT of the Cincinnati *Commercial* gives a very full description of scenery, etc., along this route, from which we collate the following as worthy the notice of all travelers who can select their own routes. We hope, ere long, to testify more entirely from our own personal experience.]

THE ROAD OVER THE MOUNTAINS.

This road is of the most substantial construction, is equipped with an incalculable armament of cars and locomotives, of all sizes and descriptions, for every purpose, and is managed with consummate energy and tact. The scenery along the route is often exceedingly beautiful, occasionally grand, and at times approaches sublimity. The Blue Ridge summits are in the distance. The chasm where the Potomac rent the mountains, at Harper's Ferry, presents to the passer by (or through, rather) on the flying car, a scene of startling grandeur.

Among the mountains the road curves often, and it sometimes seems wonderful that the engineers happened to find that particular path along the rocky steeps which could be made the high road for the mighty horses of iron and stupendous caravans that follow them inevitably over the granite deserts. At Kingwood tunnel, which is near a mile long, situated two hundred and eighty miles from Baltimore, may be seen, I think, the grandest display of railroad equipments in the world. The tunnel is being arched, and is not serviceable at this time, but will be finished in a few weeks, and over the ridge towering five hundred feet above the tunnel that pierces its heart of rock, the trains are taken with all their loads of passengers and freight, with but little loss of time; and a drowsy passenger would only be disturbed into a consciousness of wondering why the train seemed to run first one way and then another—to be capering forward and back on heavy grades. The facts in the case are hard to explain, but are about these. Two tremendous mastodon locomotives, besides which the engines that rattle along the levels seem play-things, are attached to the train, one at each end,

an dthe track to be followed is called a "Y," from the peculiar zigzag which is made. The train is rushed along the first side of the "Y" down into the point of the angle, and along the tail of the letter until it can be switched off so as to run backward up to the other prong of the letter, until any further progress in that direction is impossible, to be again switched on still another line of track. In this zigzag way the summit is passed, and so also is the de cent made.

Somewhere about the western end of the tunnel, the mail train from Baltimore bound west, and the express train from Wheeling to Baltimore, meet in the night, and a half dozen ponderous freight trains are at the same time toiling along the steeps, each with two engines, great coal burners, the jets of flame from which shed a broad ghastly light over the wild scenery. There are at times a score of these prodigious mountain engines in sight or within hearing, and this herd of iron mammoths of the mountains seem like Titans, rejoicing over the conquest of a chaos. Their signal-whistles, booming out questions and responses, sending their echoes roaring around the dismal precipices, and piny slopes, hint of the emotions of humanity in their medolations—seemed to be toned as human voices, solemn and deep in relentless resolution, plaintive in the distress of doubt, or shrill and thrilling with exultation. Their voice is that of the giants of this iron age, speaking from steep to steep, while, "every mountain finds a tongue" to call loud for help, we may imagine, against their fiery and grim conquerors, the wheels of victorious cars roll triumphant over their rude breasts. When passing this place at night, which most passengers do, the glare of the locomotive fires reveals profound abysses beside and beneath the track. Far down may be seen the dim tops of pines and cedars, standing like ghosts in the snow-whitened and flinty gulfs. And perhaps on the other side of the car, at the same moment, are jagged and toppling cliffs, so lofty that the eye can hardly trace the outline of their black peaks in the skies.

Yet the extreme peril of these wild places exist only in appearance. The road has been hewn in the living rock, graven with iron, where it will endure forever. The trussel work and bridges are constructed with the utmost solidity, and at night, guards, carrying large lanterns, are placed at short intervals along the track, to give warning of the imminence of danger, or the assurance that "all's well."

The path subdued by civilization over the mountain is, however, but little more than sufficiently broad to make railroad facilities good. At the point where the passengers get their supplies in the mountainous regions, they are often feasted on venison killed by the roadside.

RAILROADS IN NEW-JERSEY.

It is marvellous to note the rapid extension of railroads. Several States are chequered with them, running in all directions. A recent number of the *Iron Horse*, a small but ably-managed sheet, published in Paterson, contains an account of the roads of the State, from which we condense the following:

Paterson and Hudson River Railroad.—From Paterson, to Bergen Hill, where it unites with the Erie road. Length, 13½ miles, cost, $630.000.

Paterson and Ramopo Railroad.—From the Junction to the New-York

State line, near Sufferns, on the Erie road. Length, 16 miles. Capital paid, $248,225. Debt $100,000. The Erie Co. pay for it $260,500 a year.

New-Jersey Railroad.—From Jersey city to New-Brunswick. Length, 33 miles; capital paid in, $3,482,850; debts $690,000; value of property on hand, $4,309,422; pay dividends of 10 per cent.; number of passengers last year, 2,164,471, besides commuters; tax paid to State, $33,450.

Camden and Amboy Railroad.—From Camden to South Amboy, 63 miles. and there connecting with this city by boats. A branch reaches from New-Brunswick to Trenton, 26 miles, reaching Philadelphia by the Philadelphia and Trenton road. A branch extends from Bordentown, 6 miles. The Camden and Amboy road owns most of the stock of the Philadelphia and Trenton, the Belvidere, Delaware and some others, and also the Delaware and Raritan Canal, 43 miles long, 50 feet wide, and 7 feet deep.

The company pays 10 cents duty on each passenger, and also a duty on freight. The amount paid last year was $55,562; the canal yielded $43,436; cost of road and equipment, $4,877,981; invested in other roads, $2,563,000; capital paid in, $3,000,000; debt, $11,150,000; more than half due in Europe; joint earnings last year, $2,017,727; working expenses, $1,055,180; dividends, $360,000, or 12 per cent.

New Jersey Central Railroad.—From Elizabethport to Philipsburg, opposite Easton, Pa., finished for both wide and narrow guage. Length, 63 miles capital paid in, $2,000,000; cost of road, &c., $3,734,149; debts, $2,266,176; cash and property on hand, $532,027.

Morris and Essex Railroad.—From Newark to Hacketstown, 53 miles; and branch also extends to East-Bloomfield, 3 miles. The main road is to extend to the Delaware river, near Belvidere. Capital, $1,057,805; cost, $636,550 and $20,500 sub. to the Bloomfield road; debts, $375,000; gross earnings, $225,893; dividends last year, 6 per cent.

Freehold and Jamesburg Railroad.—A branch from Jamesburg to Freehold, 11¼ miles, owned chiefly by the Camden and Amboy; stock, $157,900; debt, $70,000; cost, $218,782.

Millstone and New-Brunswick Railroad.—From M. to N. B. 6½ miles, capital, $100,914; cost, $111,000; debts $10,086.

Burlington and Mount Holly Railroad.—Six miles, capital, $70,000; cost, $99,551; debt, $35,000; dividends last year, 5 per cent.

Belvidere and Delaware Railroad.—From Trenton, along the Delaware to Belvidere 64 miles, owned by Camden and Amboy; capital, $1,000,000; cost, $2,619,000; debt, $1,619,000; gross receipts last year, $161,350.

Flemington Railroad.—A branch of the preceding from Lambertville to Flemington, 12 miles, and owned by C. and A. road, capital, $150,000; cost, $279,220; debts. $129,220.

Warren Railroad.—From the Delaware river, near the Water Gap, to New-Hampton, on the New-Jersey Central, 18 miles—nearly finished; a tunnel will be nearly 3000 feet long; cost about $1,000,000.

Camden and Atlantic Railroad.—From Camden to the ocean at Absecum Bay, 60 miles; capital $369,320; cost, $1,729,642; debts, $1,532,130; receipts last year, $122,415.

Sussex Railroad.—From Waterloo, on the Morris and Essex railroad to Newton, 12 miles; capital $150,000; cost, $352,464; debt, $202,464, built for the iron trade and owned chiefly by Messrs. Cooper and Hewitt of this city.

Morris Canal.—From Jersey city to Easton, 102 miles.

CANNEL COAL AND ITS PRODUCTS.

IMPROVEMENT OF COAL RIVER.

A PROPOSITION is now before the Legislature for an increase of the capital stock of the "Coal River Navigation Company," in the additional sum of $100,000. One hundred and Twenty-two Thousand dollars have already been expended by the Company in the improvment of the river; and it is now asserted, after the most careful estimates, that by a further expenditure of one hundred thousand dollars, the entire work can be completed. The "Western Mining and Manufacturing Company" own immense, and we might say, practically, exhaustless fields of Cannel coal bordering this stream, at a distance of thirty-six miles from its mouth, and, as a matter of course, are deeply interested in the progress of this improvement. To facilitate the completion of it, they now propose to purchase of the State her bonds to the amount of Sixty Thousand Dollars, (three-fifths of the increase asked for by the Navigation Company,) thereby investing the State with the funds necessary to pay her proportion. They further propose to subscribe the remaining forty thousand dollars at once, so there may be no delay in the prosecution of this great work.

It is estimated that 5,000,000 bushels of coal will be shipped annually over this improvement, to the Big Kanawha, thence to the Ohio River. The tolls accruing to the company, will be about one cent per bushel, which would be $50,000 on the aggregate amount. The tolls on shipments of coopers' stuff, sawed lumber, &c., &c., and upon return trips, will not fall short of $15,000. If these estimates are verified, and from the data before us we doubt not they will be fully—the work will be a profitable one to the stockholders, while, at the same time, it will develop the rich mineral treasures of the section of the country it traverses. The coal fields of Pennsylvania are taxed in some instances as high as four hundred dollars per acre, pouring annually into the treasury of the State immense sums of revenue. It is but fair to infer that, with equal facilities of transportation, this Commonwealth would find in the coal fields of Kanawha and Boone counties equally as prolific sources of wealth. The Covington and Ohio Railroad, which is but a continuation of the great Central route, crosses Coal River near its confluence with the Kanawha. At an early day after the completion of these improvements, it is not unreasonable to assume that the great superiority of the Cannel coal over all other, as an article of fuel and a producer of light and heat, will bring it into general use in the eastern cities. Three-fourths of the Cannel coal, yet discovered in United States, lie in Western Virginia, constituting one of the richest mines of wealth that has ever been developed in any country, not excepting the auriferious streams and hills of California.

From this coal, is extracted, at a cost not exceeding 16 cents per gallon, a valuable lubricating and burning oil. Probably some of our readers may have noticed, a few evenings since, upon the clerk's table of the House of Delegates, a lamp containing this oil. The clear, bright flame emitted, actually made the candles around it look dull and dim. It burns free from all offensive odor and smoke, and this fact, in connection with its cheapness, must insure for it an extensive and general use. The yield is forty gallons per ton. It also yields thirty gallons of benzole per ton, which is easily convertible into

gas, and must eventually supercede the gas at present in use in our cities. From twenty to twenty-five pounds of clean, white wax are also produced from a ton of Cannel coal, which are made into candles of adamantine firmness.

Some fine specimens of this coal, from the mines of the "Western Mining and Manufacturing Company," have been exhibited here during the session, by J. E. Peyton, Esq. A lump has been upon the clerk's table, in the Hall of Delegates, for the past week or two. It has been very justly admired for its firm and beautiful texture, and its freedom from dirt.

We hope it will be the pleasure of the present Legislature to extend its aid to the Coal River Company, and place them in a condition to develop the treasures of our State. The operations of the mining companies interested in the improvement of Coal River, will be greatly retarded if something is not done before the adjournment.—*Richmond Dispatch.*

VALUE OF THE FRUIT CROP, CULTURE, ETC.

At a recent Legislative Agricultural Meeting in Boston, the culture of fruits was discussed, Mr. Wilder, the Pear King, being in the Chair. He remarked that the annual crop of Fruit was estimated to exceed $30,000,000 in value in this country. It was nearly equal in amount to the Potato crop. Fine large fruits were produced in the South-western States and in California. He thought we should become exporters of Fruit, and it was well to inquire what kinds were best adapted to our uses.

He proposed to confine his remarks mostly to "The Pear." The prerequisites to success were the choice of a congenial soil and the preparation of it, in which was included perfect drainage, sub-soiling and trenching.

A safe method is to raise new varieties from our own seedlings by planting ripe seeds from the best specimens. Many pears did well on Quince Stocks, although there was an impression prevailing against them. The quince was a gross feeder and the soil must be made rich to supply its wants.

Pears that were to be kept for some time should generally be gathered a few days before they arrive at maturity. They should then be kept at a low temperature, so that the *ripening process* could not commence until it was desired. This process required to be checked during the warm autumnal days of Indian summer. He regretted to be obliged to say that after building four different "fruit houses," and trying them all, he was obliged to come to the conclusion that the use of ice was the only method that could be depended upon to control the temperature required in preserving pears beyond the natural period of their ripening.

As to the profit of Fruit Culture it was equal to the profit of any other crop. One instance was cited in which an acre was set with pear trees in 1848. Quinces were produced between the rows of pear trees. In the fifth year the owner had on this acre 120 bushels of pears and 60 bushels of quinces. Many of the pears were sold at five dollars per bushel, &c.

INSECTS INJURIOUS TO VEGETATION.

LEPIDOPTERA CONCLUDED.

PHALENÆ MOTHS.—We now enter upon this third division of Lepidoptera, which includes a great variety of insects called millers or moths. They vary in size, color, and structure. Some are very minute, while others, like the Owl Moth, expand eleven inches. The females are sometimes destitute of wings, or are furnished only with very small ones.

The distinctive character of moths was given in the commencement of this series, and we need not repeat it. Moths are generally classified in seven groups: The first is that of

SPINNERS; BOMBYCES.—These insects are generally thick bodied, with feathered antennæ, tongue or feelers very short or wanting, thorax woolly and the fore-legs often very hairy. Their caterpillars have sixteen legs. The first group are called

Lithosiadæ, or *Lithosians*, from the Greek lithos, a stone, as these insects live in stony places. They are not very destructive. We will however mention the Deiopeia bella, as one of the most elegant of butterflies. Its fore-wings are deep yellow, crossed by some six white bands, on each of which is a row of white dots. The hinder wings are scarlet; the thorax is dotted with black. It expands about 1¾ inches.

Arctiadæ or *Arctians*, or *Tiger Moths*. These have shorter and thicker feelers than the Lithosians, and a very short tongue; antennæ doubly feathered, usually, on the under side; wings not crossed on the back, but are roofed or sloped downwards on each side, when at rest; thorax thick, abdomen short and fleshy, and usually dotted; fore-wings are variegated, hind-wings red, orange or yellow, and spotted. They fly only by night.

Many of their caterpillars are quite destructive. When about to undergo transformation, they creep into the chinks of walls and fences, or under stones and leaves, and cover themselves with rough cocoons.

The *Arctia Virginica*, or *Yellow Bear* of Dr. Harris, resembles the Ermine Moth, of England. It is white, with black points, with a yellow stripe between them, while the hips and thighs of the fore-legs are yellow.

The Salt Marsh Caterpillar is frequent on the sea-board. The best preventative to their ravages is to cut the grass early in July, while the insects are small and feeble. The Lophocampa, or crested caterpillar is common on the Button-wood or Sycamore, in July and August.

The *Liparidæ* or Liparians form the third group. They are small, slender catterpillars, bright yellow, with long fine hair, but they are not very numerous. They are sometimes found on apple trees and on other trees and shrubs.

The *Lasiocampadæ* or *Lasiocampians* are woolly thick bodied moths, and form the fourth group. The caterpillars which swarm in neglected nurseries and orchards belong to it. The eggs are placed in rings round the ends of branches, and are covered with varnish. The caterpillar comes forth in early spring, and forms a web among the forks of the small branches. In crawling from twig to twig, they spin a slender thread, which serves as a guide on their return. They eat at certain hours and then retire to their shelter. They are about two inches long, with black heads, a whitish line on their back, with fine black waved lines or stripes and spots on the sides.

To guard against these insects, different means are employed. To destroy the eggs in winter or early spring, is the first. This may be done with the thumb-nail and fore-finger. After they are hatched, a brush with a long handle may be used effectually, or a mop or sponge may be more convenient. These should be used with soap-suds, or white-wash, or with some cheap oil. This is indispensable, and should be used as long as any insects are to be found.

The *Clisiocampa Silvatica* or *Tent Caterpillar* is often numerous in some of the States, so as to strip a forest of oaks. They are thus found in Virginia. The insect is a light blue color, greenish on its sides, two inches in length—spots are scattered upon it.

The *Atticus Acropia*, an insect that expands six inches or more, forms its cocoons of silk. Limited experiments have been made in substituting this for the silk worm in the manufacture of silk.

Other insects might be described under this division of the order, but they are not very numerous nor very troublesome, nor is there any peculiar application to be used in guarding against them. Hence we pass on to the next division.

MASSACHUSETTS HORTICULTURAL SOCIETY.

GRAPES, VINES.—We have received from Mr. Wight, Corresponding Secretary, the Annual Report of this efficient Society for 1855, with the Schedule of prizes for 1856.

From the valuable information it contains we copy the following upon the cultivation of grapes. Mr. Simpson is a gentleman of education, of sound practical sense, and large experience, and what he says may be relied upon with entire confidence. For the sake of reference by the reader hereafter we annex a separate title.

GRAPES—TWO CROPS A YEAR.

It will be remembered that M. H. Simpson Esq., gave us a fine display of grapes in January, 1855, and also furnished an article (see report of last year) on the feasibility of producing two crops a year. July 7th, 1855, Mr. S. made a fine exhibition of his several varieties of grapes, grown on the same vines which produced the crop in January preceding. The berries were fully grown, and well ripened. Accompanying the sample for the Committee to test, was received the following note from Mr. S.:

To the Chairman of the Fruit Committee:

DEAR SIR,—The grapes I exhibit to day are from vines which gave the crop of fruit exhibited in January last. This is the third crop in succession on the plan of two crops a year, and thus far the vines exhibit no injury. My theory of growing them is, that when the fruit is ripe, the buds and wood are also ripe, and ready to give a new crop, if you give a proper time to nature; that the vines will not be injured, as the root throws out new spongioles, which, with the new leaves, are the reciprocal workshops that make the sap for fruit and buds. The important requisite is, that the spongioles, are

well supplied with food. With regard to rest, my theory is, that they rest at night; the leaves do not work in darkness. The experiment I have made thus far confirms my theory in every respect. It applies also to all fruits, say peaches, pears, &c. If attention is paid to the supply of the root, two crops can be grown, and give a double quantity without injury to the vines.

Yours, truly, W. H. Simpson.

Saxonville, July 7.

CULTIVATION OF NATIVE GRAPES FOR FRUIT AND FOR WINE.

We have received the Annual Report of the Philadelphia Society for promoting agriculture, read before them on the of 2d April. We thank the unknown friend who sent to us so promptly.

The Report is well written, and enforces the propriety of encouraging the growth of native grapes, both for the fruit, and for wines. As the latter may be thought to come in collision with the temperance question, a special effort is made to show that "the failure" of the temperance movement has resulted from its false principles, which denounce the use of wine as well as of distilled liquors.

It does not yet appear that the temperance movement has failed, nor is it yet proved that the people of this country can reform their habits thoroughly and with assurance of a permanent reform, while wines are used as a common drink. In some countries, and in certain states of habit and opinion, etc., this may prove to be sound logic and safe practice. The argument, for this community, we think has proved itself on the other side. But much depends on circumstances. We do not however hesitate to commend this kind of production, for such uses as may be justified.

The writer, we perceive, falls into an error, on page 5, in saying that the "Ashburnham wine" is so named from a county in Massachusetts. Ashburnham is a very respectable township in Worcester county, adjoining the town of New-Ipswich, in the State of New-Hampshire. It abounds in various forms of mechanic arts and manufactures. We have never seen the vine grown there.

MR. BRACKET'S VINEYARD.

MODE OF TRAINING VINES.

We have been highly interested by reading the report of Dr. E. Wright, Chairman of the Committee on Fruit, made to the Massachusetts Horticultural Society, and published in the March number of Hovey's Magazine of Horticulture.

Among the many things and facts there brought forward, we find a communication of C. A. Bracket, of Winchester, giving an account of his "little vineyard," and his mode of managing his vines. We are persuaded we cannot do our grape cultivating friends better service than by giving the following extract from his letter:

"My little vineyard," says he, "is situated on a side hill facing the west,

protected on the north by a belt of pine woods. I should have preferred a more northern or eastern aspect. The soil is by no means what would be called a strong one; it consists of from four to six inches of turf mould, with a reddish subsoil about two feet deep, resting upon a bed of blue gravel. In preparing for the vines the ground was trenched two feet deep, and the top soil put at the bottom. Stakes eight feet long were then set at the distance of seven feet apart each way, one vine was planted to each stake, and immediately cut down to two eyes, (or buds.) And here let me say a word as to the time of setting the vines. My experience is greatly in favor of fall planting. A vine set in Autumn (and it should be done as soon as the leaf falls,) will in three years be as strong and capable of bearing a crop of fruit as one of the five years old set in the spring.

The training of my vines is at once simple and ornamental. The first year two shoots are allowed to grow, and as they elongate are carried spirally, both in the same direction, about five inches apart around the stake, and this is continued until they reach the top. The laterals are allowed to grow at random. In the fall they should be pruned back to within eighteen inches of the ground, and the laterals to one eye.

Second year, continue the two canes from the two uppermost eyes, as directed in the first year. The laterals will require summer pruning. In the fall cut back the canes to within eighteen inches of last year's wood. Continue this course until the vine is established the whole length of the post, whatever surmounts it to be cut back. The fruit is grown upon the side shoots, and the pruning is on the short spur system. The form of the vine may be shaped to the taste of the cultivator; that of the pyramid is decidedly best.

Those who understand the nature of the vine will readily perceive the advantage this system offers. The vine is thus kept at home. The light and air circulate freely through it. The buds break easily, there is no tendency in one part to rob the other of its due proportion of sap, and when once established requires less care than any other mode of training.

Some of my vines, the first year after planting, were watered with sink drain water, and being satisfied that it injured them, I have discontinued the practice, and have since root pruned them, in order to check too free a growth of wood. Many of my neighbors injured their vines by giving them large quantities of stimulating manures, such as fresh stable manures, dead horses, and other animal manures, thereby exciting them to make an increased growth of long jointed wood. I grow my vines for the fruit, and am satisfied if they make a few feet of short jointed wood, and the only manure (if manure it may be called) which I now use, is a top dressing of Anthracite coal ashes.

Mr. Bracket speaks highly of the Diana Grape, as being hardy, early, and the grape holding on well even if suffered to hang out late. We think his hints and experiments worth attending to.

GOOD CROPS SOUTH.

Northern farmers do not manopolize all the good crops. We find the following in a Georgia exchange. Mr. Dorr raised on a Cambridge plantation, as follows:

There were 120 acres of very old land in corn; 40 acres in cotton, 30 of

which were good fresh land and 10 of old land, 5 or 6 of which were manured with stable and lot manure. The number of hands employed was 12 in number and rated as 9 good hands. The total amount of the crop and expenses, including provisions, negro clothing and shoes, blacksmith-work and iron, overseer's wages, &c, &c , is as follows:

Corn,	2,200	bushel at 75 cts. - -	$1,650 00
Wheat,	175	" at $1 50 - - -	260 00
Oats,	400	" at 50 cts. - -	200 00
Barley,	27	" at $1 00 - - -	37 00
Potatoes,	50	" at 50 cts. - - -	25 00
Pinders,	50	" at $1 00 - - -	50 00
Fodder,	25,000	lbs. at 50 cts per cwt. - -	125 00
Pork,	2700	lbs. at 8 cts , - - - -	226 00
Cotton,	48	bags weighing (averaged) 388 lbs., making 18,624 lbs., sold at 10 cts., - -	1,862 40
Total, - - - - - - - - -			$4,42 540
Deduct Expenses, - - - - -			1500 40
			$2,925 00

Equal to $325 00 per hand.

The land was prepared by ploughing as deeply as possible, then ploughing deep the first working, not so deep the second working, and finished with surface culture. Each ploughing was followed with a good hoeing, both for corn and cotton.

The following account is given of a crop raised in another "District" known as "Dark Corner," which we cannot locate; quantity of land not given.

Gross proceeds of crop were as follows:

Cotton,	34,240	pounds sold for - -	$3,147 36
Corn,	2000	bushels which, together with peas, shucks, fodder, &c., worth - -	2,000 00
Potatoes,	300	bushels - - - -	100 00
Wheat,	100	" - - - - -	150 00
Oats,	600	" - - - - -	300 00
Cotton seed,	2,300	bushels - - - - -	345 00
Pork,	700	lbs. net - - - - -	560 00
Total products - - - - - -			$6,602 36

Gross per hand $550 19. I worked twelve hands, eight head of horses and mules together, and used no guano.

Deduct from the above amount of - - -		$6,602 36
For feed of eight head of work stock,	$600 00	
For feed and clothes for hands, -	720 00	
For smithing and iron, - - -	36 00	
Dr.'s bill for these hands, - -	00 00	
Interest on land, negroes and mules,	1,250 00	
Total expenses, - - - - - -		$2,606 00
Net amount of crop, - - - -		$3,996 36
Net amount per hand, $333 03		

This is in the region of the Dark Corner, where land rates from three to eight dollars per acre.

I broke up my cotton and corn land both with a long scooter or bull-tongue plough, as you may please to call it. My cotton-land was laid off from thirty to thirty-six inches according to quality, bedded with a turning plough. I run round my cotton with a turning-plough, board side next the cotton, and followed with the hoes chopping it out; after which I replaced the bed to the the cotton as quick as possible, and every working after I endeavored to put a little more dirt to the plant, and by so doing your cotton will be well formed and mature early. On the other hand if you work your cotton by taking the bed away (as is the case with some) and not replacing it, you may produce a large weed with but few forms and these very late.

PROFITS OF FARMING.

We continue our statements on this subject, gathered from different sorces. We first give an extract from the *Country Gentleman*, in reference to

AGRICULTURE IN VERMONT.

From 13 acres harvested in Oct. last, 1600 bushels in the ear of sound corn, and 24 of soft corn. Though but little of it has yet been shelled, it is fair to count it at 800 bushels exclusive of the soft, which cannot be shelled.

Value of corn, 800 bushels, delivered at railroad station, 3 miles, at $1 12½ - - - - - - - - - -	$900 00
Value of corn, soft, 24 bushels at 25 cts. - - - -	3 00
Value of 28 cart-loads of pumpkins at 75 cts. per load, -	21 00
Value of stalks for winter feed of stock at $3 per acre,	39 00
Total - - - - - - - - -	$963 00
Expense, (including delivery of the corn at depot,) - -	365 30
Profits, - - - - - - - - - -	$597 70
Within a fraction of $48 98 per acre for taxes on and use of land.	
From fifteen and a half acres of oats were threshed by horse-power, in November last, 1006 bushels delivered at railroad station, as above at 50 cents per bushel, - - - -	$503 00
Fifteen and a half tons straw, worth at barn $6 per ton, -	93 00
	$596 00
Whole cost of production, with delivery at depot, $14 07 per acre,	$218 09
Profits, - - - - - - - - - -	$377 91

or $24 38 per acre. The land on which these crops were grown is valued at $100 per acre, which is about the price they command when offered for sale.

A farm of one to three hundred acres, in many localities in Vermont, with good buildings and stone fences, surrounded with permanent roads and bridges, churches, school-houses, and the like, can be bought at a price that—counting

all these improvements and advantages to the farmer—will hardly leave the soil at $1 25 cents per acre.

The next statement is of a lot of land in

Epping, N. H.—This statement was not made on account of any peculiarity about it, but to show the proper manner of keeping farm accounts. The crop was grown in 1855.

Lot No. 11 in field A. containing about 1¾ acres. Soil on this lot is variable, part being a deep yellow loam, having a large proportion of mineral elements in its composition, the balance a dark-colored moist soil.

Preparation.—In Oct., 1843, 24 loads of yard compost were spread on the dry part of the lot, and the sod turned under with a Michigan double plough, 9 inches deep. May, 1855, 12 loads of manure were harrowed in. Planted with corn, guano compost put in the hill; produced a good crop. Oct., 1854, cross-ploughed the lot.

April 1856, for ploughing,	$3 00
For sowing, harrowing, and rolling 4½ days,	3 37
For seed wheat, 1½ bushels,	3 37
Harvesting and threshing,	7 92
Interest and taxes on land,	4 85
	$21 51
Contra, by 19 bushels of wheat, $2 25 per bushel,	42 75
Lot straw,	8 00
Value of crop	$50 75
Cost of growing,	25 61
Cost per bushel,	71
Leaving a profit of	$29 24

The variety of wheat grown is known as the Gilman. Also a patch of peas were grown on this lot, producing an abundance of green and ½ bushel of dry peas, for which I have not credited the whole crop.

Lot No. 13, in field A, contains about ¾ of an acre.

Soil is a fine dark-colored loam, very mellow.

Preparation.—Plowed and planted similar to No. 11.

May 3, 1855, for ploughing,	$2 00
Harrowing and sowing,	1 00
1 bushel seed wheat,	2 25
Harvesting and threshing	4 50
Interest and taxes on land,	3 00
	$12 75
Contra by 11 bushels wheat	$24 75
Lot of straw,	4 00
Value of crop,	$28 75
Cost growing,	12 75
Profit of crop,	$16 00
Cost per bushel,	70

The above crop was injured by worms, thining it early in the season.

The wheat grown on this lot is known as the White Flint wheat, yielding beautiful white flour. The straw grows large and appears hardy; heads of the same length do not produce as much wheat as those of other varieties; the berries do not set thick on the head, but grow at some distance apart, giving them a loose or open appearance.

FOR THE PLOUGH, THE LOOM AND THE ANVIL.

BROOM CORN, SORGUM SACCHARATUM.

For many years this very useful plant was almost exclusively a "Yankee Notion." It is an exotic, brought from the East Indies, yet seems well adapted to our climate. For near a half a century its culture was confined mainly to a few towns in Old Hampshire County, on Connecticut river. It is now cultivated in some parts of New-Jersey, in the Mohawk Valley in New-York, and in Ohio, Indiana and Illinois. In New-England, where the farmers are always ready to engage in the cultivation of what will pay best, Broom Corn is still confined to the Connecticut Valley, and mostly to some ten or twelve towns in Massachusetts.

The Corn Broom has now become an indispensible article in most civilized American families. The unwieldy "splinter broom, which our grandmother were wont to elaborate, by dint of patience and perseverance, from ash, maple and hickory, have yielded to the force of the adage, "a new broom sweeps clean."

Soil and Climate.—This plant will grow and mature in any part of the temperate region where the soil is adapted to it. But it seems to do best between 38 and 43 degrees North. Below, it grows too rank, and the brush is coarse. Above, it does not mature and the seed is of no value.

The soil should be a deep, rich, sandy loam. It should be ploughed deep, manured highly, and reduced to a fine tilth and planted early. The roots, unlike those of the Indian corn, cluster together, in form somewhat like the distaff, and run directly downward. The plant, in its infancy, is very small and feeble; and seems for the first month, to struggle hard for life. It requires a longer season than Indian corn. Hence the importance of having land naturally warm, that it may be planted early and ripened before the frosts of autumn.

Cultivation.—It should be planted thicker than Indian corn. Let the rows be of sufficient width to allow a horse to pass between them, say three feet, and the hills in the row two feet apart, with an average of ten stalks in each hill. A better way is to use the planter, and leave a kernel every three inches. Planted in this manner, the labor of weeding is much less, and the quality of the brush better. In seeding a liberal allowance should be made for insects and vermin. They often lay claim to the whole, and are seldom satisfied with less than one-half.

It has been supposed necessary to manure in the hill, and that till very recently has been the universal practice. A better way has been found out. I would not manure the hill for any crop. However light the dressing, let it be spread broad-cast over the whole surface. If the proper pabulum of plants is in the soil, the roots will find and appropriate it. To thrust a shovel-

full of manure underneath a hill of corn, and leave the ground about without manure, is much like stuffing a starved horse with oats on the morning of a hard day's journey, and leaving him to fast the rest of the day. Better feed him well for some days previous, and during the working day, let him have his ordinary feed. So of manuring, let it not be done solely for the crop, but partly for the land. The farmer who pursues the former course will always till a sterile soil, and himself be poor.

During the first six or eight weeks, constant care must be bestowed upon this crop. The earth should be frequently stirred, and all weeds carefully excluded. Not less than four times hoeing will answer, and much care should be used at the second or third hoeing to reduce the number of stalks within the limit mentioned above.

HARVESTING.—This should be deferred until the seed is hard, if the season will allow. But if a frost come prematurely, and blight your prospects, the brush should be cut immediately. The common mode of gathering the brush is by tabling, as it is called. The stalks of two contiguous rows are broken down and made to fall diagonally across each other, so as to form a sort of table, on which the brush is spread to dry. Cutting and spreading the brush is suitable work for children. So long as the weather remains good, the brush should be permitted to remain, being occasionally turned. But upon the approach of a storm let it be housed. It is damaged by rain no less than cured hay.

The next step in the process is to bind the brush in bundles, averaging about fifteen pounds, and placing them on end, with the buts down, under cover, where the air can have free access to it. When thoroughly dried, the seed is scraped off and the brush is ready for use.

Another mode of gathering is to cut the stalks near the ground, and lay them longitudinally between the rows, disposing of the product of two rows in one furrow, and spreading the brush upon the stalks. When it is intended to plough and sow after harvest, this course must be pursued. In this case, the stalks may be buried with the plough. In the other, they are usually cut and burned upon the ground.

PROFITS.—Seven hundred pounds of brush is about an average yield per acre. One thousand pounds is not uncommon. Land that is in a suitable condition to produce seventy-five bushels of Indian corn, will, under ordinary circumstances, yield a thousand pounds of broom brush. Brush is now selling for ten cents per pound. It ranges from four to twelve cents per pound, averaging about six.

The seed is an important item in the product. It is not a certain crop, being liable to be spoiled by early frosts. The seed may be killed without materially injuring the brush. But when the season is favorable it is not unusual to get ten bushels of seed to every hundred pounds of brush. Thus the seed, in a good season, is fully equal in quantity to the crop of oats which the same ground would produce; and for most purposes of stock-feeding it is considered equally valuable. The whole product may be summed up thus:

700 lbs. brush at 6 cts. - - - - -	$42 00
70 bushels seed at 42 cts. - - - -	29 40
	71 40
But 1000 lbs. at 10 cts. - - - - -	100 00
And 100 bush. seed at 50 cts. - - - -	50 00
	$150 00

More than this has, in some instances, been realized.

It is generally believed that, in case the seed ripens, it is a better crop at 5 cts. per lb. for the brush, than Indian corn at 83 cts. per bush., which is about the average price in this region.

It is thought to exhaust the land less than most other crops. I know of fields that have been planted with broom-corn more than twenty seasons in succession without deterioration in the product. R. B. H.

AMHERST, MASS, March 20, 1856.

FOR THE PLOUGH, THE LOOM AND THE ANVIL.

FOREST TREES OF NICHOLS, TIOGA CO., N. Y., AND THEIR USE.

THE WHITE PINE CONTINUED.

THE price of pine boards down the Susquehanna river for a few years back has ranged from $9 to $14 per thousand—that is, for common cutting lumber or common boards, as some would term it,—the different sizes of pannel ranging from $18 to $40 per thousand. A considerable amount of square timber has been taken from this vicinity. I am not acquainted with this business, but the value of timber often varies much. Some years it is very high. Last year it was so low as to be a losing business. The timber is got out or hewed on four sides, and each stick is from forty to seventy feet long, and often over two feet at the butt end.

The age of the pine is variously estimated. It is quite difficult to count the rings of a large pine. As far as ascertained, the oldest pines in this vicinity range from 250 to 300 years. It is said that a pine was cut down some years ago in the town of Southport, Chemung Co., N.Y., that was over 700 years old. In the year 1841, I cut down a few pines that were of the second growth, or had grown since the land was partly cleared, that were from twelve to fifteen inches in diameter and from twenty-eight to thirty years old, and about thirty-five feet high,—being low and full of limbs like an apple tree. A pine growing in thick wood, that is twelve inches in diameter, is often sixty years old and fifty feet high. A large pine has always an old appearance, being nearly covered with two or three varieties of moss from the ground upwards for several feet, and even on the limbs is found a long, shaggy, gray moss. The wind blowing through pine boughs makes a sighing or humming noise, not unlike a swarm of bees flying over.

A large portion of this vicinity is covered with pine stumps; but a great proportion of them have been pulled within twelve years, and many are now pulled yearly. With Hall's cylinder machine, I have helped pull one hundred pine stumps in a day, the stumps being of a small size and on a diluvial formation, while on hill land, with a good lot of stumps, we pulled from forty-five to fifty-five per day, and on low creek flats, with large stumps, only from fifteen to twenty per day. The price of this machine is about $400. The Hook and Lever stump-machine is getting much in use in this vicinity, and is thought by some to be equal to the Hall machine, and to be more easily worked. The cost of this machine is from $120 to $200, according to the amount of iron used.

Generally all pine stumps with good roots are used for fence in this vicinity. I have about a mile and a half of stump fence, and it wants but little atten-

tion from one year to another, and will last an age or more. The pine stumps are hard to root out. Sixty years do not effect much in this way.

NICHOLS, April 14, 1856. ROBERT HOWELL.

INFLUENZA OF HORSES.

BY CAPTAIN RALSTON.

THE perusal of "Thoughts upon the Prevailing Disease among Horses," in the March number of the American Veterinary Journal, together with a preceding article, upon "Influenza," in the number for January, has induced these observations. The writer feels constrained, as a Veterinarian, to commence by remarking that it may be deemed his herein views had better been submitted to the professional journal which has called them forth. But with every respect for any journal devoted to the veterinary art, and this in no diminished degree for one which he favorably estimates, as a pioneer-effort towards highly desiderated objects, in relation to eventual veterinary progress in this country, still he has preferred the privilege of the pages of the "P. L. and A.," inasmuch that professional readers as yet are scant, and it is therefore of advantage to promote and extend discussion, through the more generally circulated and read (and cousin-german) pages of an agricultural serial, in manner whereby it is hoped that veterinary subjects may come more and more under the recognition of those whom it is most to be desired should be aroused into intelligent consideration of their importance. It may not be amiss to furthermore add,—and this is ventured under a truly earnest wish that the journal, which has been first on the field of American veterinary culture, should strike its roots deep, grow, and successfully flourish—that over-much of school science, at the outset, may not prove favorable, on so new and untilled ground? Still the higher scientific tone is to be respected; and, if the editors of the American Veterinary Journal always shall draw for information or seek exponents of the important art which they represent, through such sources as those of "The Veterinarian," (British,) and the writings of the late William Percival, and of his father, (formerly at the head of the veterinary staff of the Royal Artillery and Ordnance Corps,) there is no veterinarian but will indorse the tenets and the teachings.

In 1852, the writer sought to attract some notice to the influenza of horses, through the medium of the "*Spirit of the Times*," and what is here submitted will be a somewhat modified reproduction of the same views. In the A. V. Journal, "Influenza," it is said, passes in stable language under the familiar term of *horse ail, pink-eye, etc.*

The writer demurs as to *pink-eye;* for he opines that thereby is meant a peculiar chronic-opthalmic affection of the conpinctival tissues (or membranous linings of the eye-lids and white of the eye,) the consequence of standing in darksome and ill-ventilated stables, and where the disengagement of amoniacal gasses assail the eyes and act as a specific local poison to those organs, resulting in corneal opacity, cataract, &c. Such conditions of badly-arranged and ill-kept stables injuriously affect all the vital organs of animals subjected thereto, and particularly pre-dispose to pneumonic affections, and not unseldom beget farcy or glanders.

But in connection with influenza, itself, he also demurs as to those "typhus" and "typhoid" complicities introduced, in manner seen in the "Thoughts upon the Prevailing Disease among Horses." Far be it that any new light from science, or investigation, should be excluded from respectful attention or inquiry; but we may define and refine too far, and thus perplex. In the old term of "Influenza Maligna" the same idea may be said to be predicated; and the writer proposes to waive those new aspects, and treat of Influenza simplex and Influenza maligna, their causes, symptoms, and also their more ready treatment in horse-owners' own hands.

The first alluded to form of this affection is variously named cattarrhal fever, epidemic cattarrh, influenza, and (in the racing stables) distemper. Young horses are generally most liable to and prove least able to contend with or surmount its effects. It ordinarily commences with a rigor, or slight shivering fit. This premonitory, or incipient indication, is very rarely observed or attended to. If, however, it should be noticed at the outset, it may be of much importance; since recourse to prompt and judicious treatment might then arrest the further progress of the attack. We will consider this commencing or initiatory stage of the disorder.

In inflammatory affections, whether of the lungs, bowels, kidneys, or other organs; or in the early or acute stages of local injuries—as wounds, strains, &c.—the resort by uninformed farriers and stable-helpers is almost invariably to stimulant applications, internal or external, as the case may be. Now, at the proper time and place, stimulant and discutient remedies are valuable therapheutical agents; but to administer them in the acute stages of inflammation of the lungs, bowels, &c., or to apply blistering unguents, or imitative oils, or tinctures, in cases of recent injuries or strains, is treatment as pernicious as it is ignorant. It is like pouring alcohol or gunpowder on flame, to extinguish it. *After* inflammatory action is abated, and when the general tone of organs, or local action of parts, has been left in a depressed or unreinvigorate state, then the cordial or the tonic, the blister or the caustic, may become most estimable curative adjurants. Otherwise, the so constant and irreflective recourse to stimulants, at the wrong time and place, has done and does incalculable mischief, in *quasi*, veterinary practice. This is a gross medical and surgical error, which has killed animals by thousands annually, and which converts casual and curable injuries into incurable lameness and permanent blemishes. But ignorant assumption meets with perilous trust and confidence where human health and life are concerned; and if so in relation to ourselves, can better be expected for our domestic animals! Quacks and nostrum-venders flourish; for the want of sufficient knowledge on the part of those ailing—and in earnest and anxious quest of relief, leads to reliance on the sordid vaunts of unscrupulous ignorance. In other things than those of health, individuals will properly require to have some avouchment—to understand the grounds and have reasonable proof of capacity or trust-worthiness—before rendering belief or reliance; but in what is of so paramount moment as competent medical or surgical treatment when sick, the reverse of this is the too frequent rule. It is not "*damnant*," but "*credant*, quod non intelligunt;" for just in proportion to his outrageous averments, and the impossible qualities imputed to his nostrums, is often the blind-fold dependence placed in the *empiric*. As regards animals—let us say horses—*they* cannot, in words express the causes or seat of their ails, or complain how maltreatment may be injuring or torturing them. Yet, while the verbal expression is denied, they have a mute, but most eloquent language of their own, and one alto-

gether undeceptive, if the right observation, tact and skill be in attendance—qualifications each and all essential in the veterinary surgeon. The maladies of animal life are not so complicated as those of human life; but they run their course more rapidly and determinately. Hence, with the former the art of the practitioner—the *mendendi scientia*—is required to be more promptly and shrewdly unerring; else, irrespective of what ought to be done being left not done, the opportunity to do anything effectively may altogether be lost. This, however, all matters but little with your genuine "horse doctors;" for with the the professors of that school of practice the *Quid dem? Quid non dem?*" is a modest self-interrogatory, having no place. With them no adequate standard of general education, on which has been based one more especially professional, so as to guarantee some scientific attainments in anatomy, physiology, pathology, and the art of healing, is in any manner or degree needful for recognizing the symptoms, seat, causes, and remedial treatment of the diseases of animals!

The foregoing has, however, traveled somewhat out of the record concerning stimulants. The object, however, was to decry the abuse of these before adventuring on a recommendation of their use, in one of the rare exceptional cases. If an influenzal attack be recognized in its premonitory, or very early stage—that is shortly from, or a few hours after the horse has been certainly well, and when the drooping attitude, languid, yet quickened pulse, and general appearance of a "cold," but without cough or muscous discharge; in fact when presenting those symptoms which betoken a disturbed or oppressed constitutional, or febrile crisis, without indications of organic inflammation or lesion; then, and just at this time, if two or it may be three quarts of blood be drawn from one of the jugulars, to relieve the heart and lungs, and thereupon proper stimuli be administered, a sanitary reäction may be superinduced, and the revulsive nervo-vascular disturbance, which developes in the mucous membranes, and prostrates the physical energies so rapidly, so as greatly to complicate the after treatment, may be arrested, or materially controlled. The best and safest of the diffusible stimuli for use, in these cases, is nitrous ether, or sweet spirits of nitre. Say, that 2 oz. of nitrous ether be taken, and 2 drachms of infusion of camomile; add these to ½ a pint of milk-warm water, and let this dose be given twice a-day. A bottle is often used for giving fluid medicine; but it is inappropriate and unsafe. An ox-horn makes a serviceable instrument. Sever an inch or two off the small end, and plug it; and then cut the wide end slantingly, so as to form a sloped open end. Put the drink into the horn, and an assistant having quietly opened the horse's mouth, and gently grasped his tongue so as thereby to draw it a little out on one side,—at the same time, with the other hand, elevating his head and muzzle a little let the open end be inserted, on the other side, and over the back part of the tongue, and the contents be softly poured down, gulp by gulp. Every action and movement should be made with the greatest gentleness, not only because the horse's throat may be sore, and swallowing painful, (besides the natural distaste for the medicine and the constraint,) but because less resistance or struggle will ensue, and there will be no risk of injuring the mouth or tongue. At all times, the more unwilling or violent horses are, the greater the occasion for gentleness, otherwise an operator will be more baffled, and the draught be got over with so much irritation as to do more harm than good. In all operations and restraints, as in all lessons or instructions with horses, patience and gentle handling must ever be a *sine qua non* to succeeding well; and the shyer or more intractable any animal may be found, the greater the occasion

for his being soothed, and given time, and gone about gently. High couraged and valuable horses—often those the most so—are most of all apt to be rendered sulky or stubborn, and every way of inferior value, by hasty treatment and unfair curbing, constraint, or punishment. Animals cannot, by language, be made to know or understand what it is sought they should obey or do; and as training, &c., to them are acts of a character at once disagreeable and unaccountable, so favorable or kindly submission can only be induced or expected from quiet and gentle, but firm proceedings, and everything that is alarming, or has a coërcive aspect, ought to be studiously avoided or concealed.

As relates to such cases of influenza as has been referred to, besides the nitrous ether draught, ¾ of a pint of sound ale, sweetened with two teaspoonfuls of molasses, and having 2 drachms of the best ground ginger stirred in, may be mixed with a pint of milk warm water, and given alternately with the other. The patient should be placed in a moderately warm, well-ventilated loose box if possible; in any case well clothed, and where there are no currents of cold air. He should be bedded up to his hocks in short dry straw; and leg-bandages of flannel may be usefully employed. The food should be small potions of sweet hay; barley or malt mashes; a handful or two of oats; and for drink thin water gruel. If in two, or as may almost be said, one day, the attack does not seem to be arrested, and if mucous discharge from the nasal membranes supervene, then the complaint is established, and will run its course.

In the latter case, the treatment is not very different; but the progress of the disease has now to be carefully watched. The mucous, serous, and seromucous tissues seem to be especially attacked. Their nervous tone seems to be altogether deranged, and their secretions correspondingly. In fact, all the membranous system seems to sympathize, accompanied by flying neuralgic twinges. The worst and most difficult symptom, however, is the extraordinary weakness and prostration of all the energies which rapidly attend the mucous discharge. This and the indisposition to food, together with the pulse running high and the breathing oppressed, complicates the case; for it is unsafe to abstract blood, and still the case must not be lost from congestion of the lungs and heart. If food be entirely rejected, pretty thick, smooth oat-meal gruel, sweetened with a spoonful or two of molasses, and with 1 drachm of nitre dissolved in the ½ gallon should be horned over 4 or 5 times a day. Enemas of the same kind should be thrown up. Bran may be stirred in the water, and poured off clear, and in this 1 drachm of nitre and a table spoonful of honey may be dissolved to the pailful. If the submaxillary glands are tumefied and painful, some blistering liniment should be rubbed in between the jaws and along the course of the throat. But the practitioner's or owner's best treatment is limited chiefly to moderate warmth, pure air, a well bedded-up loose box, offering small quantities of tempting food, (or if need be horning over gruel and exhibiting enemas,) and giving weak nitro bran-water. If the patient begins to breathe less oppressed; his pulse fuller and not so quick; the membranes lining the nose more natural in color; in a word, if the symptoms altogether indicate decreasing febrile action, everything is to be hoped. The leading object is thereupon to support the strength—by means of gruel, and small malt mashes frequently offered. An oxymel may be beneficially used twice a day in ¼ of a pint of honey, mix a small spoonful of brandy, and the same of vinegar; stir into it a table-spoonful of linseed-meal and ½ of a pint of sound ale; and incorporate the whole in two pints of boiling water. Horn over one-half for each draught, when cold.

These remarks having run a sufficient length for the present month, the

writer defers his observations on Influenza Maligna until the next month. It may not be amiss to here observe thst the present suggested treatment is intended to be of a scope adapted to cases in any horse-owner's own hands, and when these are disposed, in a lesser degree, to complications and adverse results. In any such latter or more serious cases, the aid of professional advice is indispensable; and bleeding, counter-irritants or blisters, rowels or setons and such internal remedies as tatarged antimony, digitatis, hellebore, calomel, opium, croton oil, etc., may come to be demanded, according to symptoms, and the patients condition. J. C. R.

Grad. Roy. Vet. Coll., Memb. Roy. Coll. V. S. &c.

[The above was designed for our last issue, but was received too late. The subject will be further discussed in our next number.—Ed. P. L. & A.]

COW RELIEVED BY SURGERY.

The following case of surgery is reported in the *Ploughman*. The operation was performed by Dr. Thayer of West Newton, Mass., upon a favorite cow of Mr. Geo. E. Allen. The case was stoppage, caused by the generation of gas in the stomach from eating too many rotten apples. He says:

"Finding all my efforts to remove the difficulty, unavailing, and she growing worse rapidly, I called in the doctor above mentioned, who very quickly decided that nothing but tapping would save her, and with my consent he made an incision directly into the Rumen, or first stomach, just in front of the hip upon the left side; and introducing a small tube, such an escape of *gas* took place as would astonish even our *modern politicians*. But the result was all we could desire, the swelling went down at once, and the cow was worth forty dollars more than before the operation. Those who witnessed the case, and some were *old farmers*, pronounced the operation entirely new to them."

AGRICULTURAL CROPS.

PROFITS OF FARMING.

A recent number of the journal of the N. Y. State Society mentions the following crops raised in different parts of this State. How can it be that farmers are content with less than half a possible crop and one-tenth the possible profits?

Mr. R. R. Hart, of Oneida, raised 70 bushels of shelled corn to the acre. Mr. Wm. Johnson, near Geneva, raised 38,671 lbs. of shelled corn on nine acres, equal to $76\frac{4}{5}\frac{2}{0}$ bushels per acre.

Twenty-two cows on Mr. J. S. Hilbert's farm, Chemung Co., produced 4116 lbs. of butter. Included were two three-year old heifers. This butter sold at 27 to 37 cts. per lb. The average yield per cow is 187 lbs. each, or counting them as 20 cows, it would give 205 lbs. each.

In Tioga county the yield of rye is about 20 bushels per acre, some fields producing 28 bushels. The average yield of barley is 25 bushels per acre.

That of Indian corn, 28 bushels per acre, while some fields produced 60 bushels. Buckwheat produced 15 bushels per acre. Oats average 35 bushels, some land producing 60 bushels. Hay, average, 1½ tons per acre, and some fields produced 2½ tons per acre. Potatoes about 50 bushels per acre.

INDUSTRIAL STATISTICS.

BRIDGEWATER, MASS.—Population in 1850, 2700; in 1855, 3363; increase in five years, 575.

Four Rolling and Nail Mills; 1000 tons iron manufactured and not made into nails, valued at $80,000; 52 nail machines, 62,500 casks nails manufactured, valued at $250,000; capital, $77,000, 207 men employed. Two Forges, 70 tons manufactured, value of bar iron, etc., $10,500; capital, $7000, 20 employed. One furnace, 600 tons casting, value, $40,000; capital, $18,000, 30 employed.

Two paper manufactories; 270 tons stock used; 210 tons paper manufactured, valued at $30,000; capital, $18,000, 20 employed.

Two establishments for manufacture of coaches, wagons, etc., value of articles manufactured, $5,800; $2000, 7 employed.

One soap manufactory, 25,120 gallons manufactured, valued at $2,540; $1,500 capital, 4 employed.

One tin manufactory, value tin ware $500; 2 employed.

One cotton establishment, value of manufactures, $14,000, $30,000 capital, 40 employed.

600 pairs boots and 166,000 pairs shoes manufactured, valued at $125,700; 55 males and 35 females employed.

3,000,000 bricks manufactured, valued at $12,000; 30 employed.

63,600 bushels charcoal, valued at $4000; 20 employed.

90,000 ft. lumber prepared for market, valued at $7,600, 30 employed.

2217 cords firewood, valued at $6,651, 30 employed.

259 horses, valued at $16,472; 151 oxen over 3 years old, and 18 steers under 3, valued $7,557; 44 milch cows, and 51 heifers, valued at $14,288.

25,836 lbs. butter valued at $6,459; 6679 lbs. cheese, $834; 130 lbs. honey, $26.

283 acres Indian corn, 20 bush. per acre, valued at $8,136.

1½ acres of wheat, 16 bush. per acre, $48.

57 acres of rye, 11 bush. per acre, $857.

3½ acres of barley, 24 bush. per acre, $80.

129 acres oats, 23 bush. per acre, $1,809.

1 acre onions, 380 bush. $190.

4½ acres turnips, 325 bush. per acre, $450.

1½ acres carrots, 416 bush. per acre, $62.

¾ acre beets, $42.

1540 acres English mowing, 1128 tons, $20,304. 414 tons swale hay, $4,140.

9299 apple trees, $902. 1180 pear trees, $128.

14 acres cranberries, $520.

1 shingle and box board manufactory, capital $3000; men employed, 12.

Value of machines manufactured, $4000, men employed, 5.—*Ploughman.*

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

THE RESPONSIBILITY OF WOMEN FOR THE HEALTH OF THEIR OFFSPRING.

MR. EDITOR:—A medical writer has remarked that "Perfect health in civilized society is unknown; it exists only as an ideality." This startling truth, which any one of observation cannot dispute, leads to the inquiry, Who is in fault? A full and impartial answer would require us to examine the duties of both sexes. At present, however, we shall only consider the manner in which woman discharges her high responsibilities as *mother* of the race.

From reports published by Miss Beecher and others, we learn that our towns do not average *one healthy woman*. Nevertheless, he who teaches that the sex are in fault for their bodily infirmities, is often regarded as blaspheming; for has not Providence seen fit to afflict them!! Thus by making Supreme Power the scape-goat, they *piously* relieve themselves of all responsibility for their own sufferings and those which they inflict upon the race.

When we consider that about every third woman has a diseased spine, that at least every fifth one is scrofulous, consumptive, or possessed of some other disease transmissable to her offspring; and making no estimate of general debility and various weaknesses, that not one in a hundred can boast of having no deformed bones, we are led to ask, what kind of a Providence is that who thus delights in disfiguring his noblest work? Providence establishes laws—those who violate them suffer the penalty. If we look from effects to their causes, we can trace to the habits and customs of women many of the evils which have vitiated the human family. It cannot be expected that infirm parents, groaning under a load of disease, will give to the world an iron race. It should not be expected that women who shut themselves in from the inspiring air and sunlight of heaven, confining their labors entirely to the house or living in indolent luxury, will "stamp their race with signatures of majestic grace," or transmit to the world offspring possessed of sound mental and physical organizations. As reasonably may we look for pure sparkling waters to flow from a malignant morass.

There are those of the sex that have observed and reflected much, who know and acknowledge that women are in fault, criminally so, for scores of the complaints from which the race suffer. With such lies the weighty duty of commencing a reform, which shall restore to the human constitution *some* of its pristine *tone*. At the present time few of our girls reach the age of twenty in a sound condition. Large numbers marry and become mothers,—give to the world a suffering offspring, and themselves drag out lives of pain. So it will ever be until education and fashions accord better with the dictates of nature, until parents observe the laws of health themselves and require them to be observed in the treatment of their children.

Take a fair girl of seventeen or eighteen, who has been so fortunate as to inherit no disease and to pass through the periods of infancy and school with no other misfortune than to come out *rather delicate*, teach her by example to submit to fashions, however opposed to the dictates of sound sense and the demands of sound health they may be, encircle her waist with whalebones and steel; load her hips with skirts, corded, quilted, hooped and starched, tied tensely around the person to keep them in position; have her adopt the sedentary habits of thousands of our women, and then in a few years look at the woman you have *re-created* from the noble girl.

Her whole body is in an abnormal state. Weakness and disease prey upon a form, which, had a reasonable course been pursued, would have been bounding with health. Thus it is that Providence sends afflictions!! Were they not invited?

If women would rejoice in the fulness of life, if they would give to the world an offspring beautiful and noble, let them make the laws of health the great study of life, and the instruction of their children therein one of their great duties.

Let them throw aside whalebones and steel, and make easy but elegant costumes. Let them untie the strings which are doing a work as fatal as the hangman's cord. Let every garment be suspended from the shoulders. Let every limb have scope for action. Let them spend several hours per diem in the invigorating air which God has adapted for their lungs.

Teachers are grossly in fault for not bringing these things forcibly before their pupils, both in practice and in theory. The long processions formed to *take exercise* in measured pace, for half an hour in the twenty-four, leave no vivid impression upon the pupil except a remembrance of the stupidity of the performance. Let scholars *feel* the pleasure of living at least three hours per diem in the open air, and they will readily comprehend when instructed that it is an agreeable duty to do so.

The health of morals and intellect sympathizes with that of the body. If the latter becomes prostrate the former may become enfeebled. It would therefore seem appropriate for our eloquent divines to inculcate, occasionally, lessons upon the important subject of health and the responsibilities of every intelligent being. The effect would doubtless be as beneficial to the human family as homilies upon natural depravity or original sin.

JUNE ISLE.

NOTE BY THE EDITOR.—The above topic is one of immense importance, which ought not to be considered out of place in any journal, moral, scientific, or political, for sound minds can only be looked for in sound bodies, and permanent defects in one lead to the ruin of all our social and political institutions. We were not aware that abnormal organizations were so common as they are represented by our correspondent, but we are quite certain that reform in this matter is imperatively demanded, and that we have yet to endure a large part of the penalty for our sin in these matters. From this there is no escape. There is no pardoning power. The law is inexorable. We commend this matter to the serious attention of our readers.

We only add that natural law has herein provided against the permanance of all assumed superiority in the wealthy classes. They are obliged to resort to external appendages, to costly dresses and extravagant modes of living and peculiar habits of life, in order to distinguish themselves from their neighbors. These very habits ruin both mind and body in about two generations, and not only reduce them to the ordinary level in personal attractiveness, &c., but to objects of pity, demanding the sympathies even of the poor.

A "millionaire" once said to us, "I would give you every dollar I am worth for your legs." So the wheel turns. Let not those who are getting up exhibit so much folly as their predecessors. Yet we are sorry to say we think they furnish too much evidence that they are becoming the silliest of all fools who have preceded them.

AN AGRICULTURAL BUREAU.

WASHINGTON, April 4, 1856.

THE following very interesting letter, addressed to the Agricultural Committee in the House of Representatives, exhibits the scope, objects and operations of a bureau of the Government, yet in its infancy, but which is fast becoming one of the most practically useful and important.

UNITED STATES PATENT OFFICE, March 31, 1856.

Agreeably to request, herewith I furnish you with some of the principal reasons why Congress should increase the agricultural appropriations hereafter to be expended by this office with some of the benefits to the country which have already resulted from the appropriations made years past.

One of the prime objects of these appropriations has been the introduction of new and useful vegetable products hitherto unknown in the United States, and the increase and dissemination of those of superior qualities which had already been cultivated or otherwise known. Measures have been taken to procure from every quarter of the globe, such seeds, plants, roots and cuttings as would be likely to succeed in any part of the country, and placing them in the hands of persons who were the most likely to test their adaptation to our climate and soil. As a matter of course, many of the experiments thus made unavoidably proved abortive; but in numerous cases, they were attended with the most signal success, and a single product, in the opinion of competent judges, has added millions to our resources. For instance, a variety of wheat known as the "Mediterranean," which was brought to this country a few years ago, has proved highly productive, hardy and maturing several days earlier than other varieties, thereby escaping the ravages of insects and rust, besides being sooner ready for market.

Within the last year no less than seventeen varities of wheat have been introduced from distant parts of the globe, and distributed in various sections of the Union, most of which promise to be attended with good success.

The "Indian mixed" or "Dourah corn," of African origin, has also been introduced, and it constitutes a valuable crop in the South.

The "Japan pea," unsurpassed by all the others in its yield, believed to be of Eastern origin has been cultivated in various parts of the country with remarkable results.

The "Chinese yam," originally from China, but more recently from France, which promises to serve as an excellent substitute both for the sweet and common potato, has been sufficiently tested to prove its value in the Southern as well as in the Middle States.

The "chufa" or "earth a mond," a small tuberous esculent, from the south of Spain, which has naturalized itself to our soil and climate, has proved prolific in its yield when grown in light sandy soils, as well as those which are rich, and bids fair to become a valuable forage crop for cattle and swine.

At least thirty varieties of turnip seed, including the best cultivated in England, as well as on the continent in Europe, have been imported and disseminated in every State and Territory of the Union. The benefits are already apparent. Similar experiments are now being instituted with all the leading varieties of grasses, cabbages and peas of Europe, the results of which will soon be made known.

Among the forage crops it may be mentioned that the Chinese sugar cane (So gho Suche), a new gramineous plant, of Chinese origin, but more recently

from France, has been introduced and has proved itself well adapted to the geographical range of Indian corn. The amount of fodder which it will produce to the acre is estimated to be twenty-five tons; the stalks of which are filled with a rich saccharine juice, the whole plant being devoured with avidity by cattle, horses and swine. It is of easy cultivation, being similar to that of maize or broom corn; and if the seeds are sown early in May in the Middle States, two crops of fodder can be raised from the same roots in the season—one about the first of August, and the other in October.

Another valuable forage crop, the "German millet" (*Mohn de Hongrie*) has been introduced from France, which is very productive, of quick growth, resists drought, and flourishes well in dry soils.

Among the cuttings of fruits trees and vines which have been introduced may be mentioned the "Prune d'Ageu," the "Prune Sainte Catharine," and the "Vigne Corinth." The two former have been grafted on the common plum in all the States north of Pennsylvania, and on the mountainous districts of that State, Maryland and Virginia. From the success which has attended this experiment, there is every reason to hope that there will soon be produced sufficient dried prunes in those regions to supply the wants of the whole Union. Among the seeds of indigenous growth, which have been selected and distributed, in reference to their superior qualities, as well as to their probable adaptedness to certain parallels and localities, and which have proved highly productive, there may be noted several varieties of Indian corn.

Among these are the "Improved King Philip," or brown corn obtained from an island in a lake in New-Hampshire, which was extensively distributed in all the States north of New-Jersey, and the mountainous districts of Pennsylvania, Maryland and Virginia. The result has been that it matured in less than ninety days from the time of planting, (about the middle of June,) and yielded, in one instance 134 bushels of shelled corn to the acre. Another superior variety, from New-Mexico, the "New-Mexico White Flint," has been distributed, which appears to be adapted to the entire corn region south of Massachusetts. For ordinary use, either green or dry, its quality of excellence is unsurpassed.

Among the products which it has been proposed to introduce from abroad, with a view of making special experiments, to be conducted by agricultural societies or by individuals in the several States and Territories of the Union, may be named considerable quantities of all the best varities of wheat and of other cereals of the globe. In addition to these there might be imported the seeds, roots or cuttings of all the principal economical plants and trees known, and experimented upon in a similar manner.

In connection with the subject I would suggest the expediency of Congress making the annual appropriations for the purpose of agriculture sufficiently early in the season to order most of the seeds to be grown the approaching season, so that they may be received in time for distribution by the first of January or before. For it has been found by experience that when large orders for seeds have been made after the month of April or May, it was impracticable for the seedsman to furnish an adequate supply without procuring them from various sources and this too often requiring several months. Hence most of the seeds would arrive too late for the southern and middle sections of the Union; or if they were attempted to be kept over till the next fall they would be either devoured by vermin or insects or rendered worthless by age.

Another feature connected with these appropriations which appears to need

simplification or reform, is some more feasible and equitable plan of disposing of these seeds than had been adopted heretofore.

I would therefore, suggest that, instead of distributing of them promiscuously, through members of Congress, societies or individuals, who may apply directly for them at the Patent Office, suitable arrangements be made by said members for them to be sent, in bundles not exceeding four pounds weight, franked by the Commissioner of Patents, to the State, Territorial and county agricultural societies, or to the Secretaries of States or Territories or County Clerks, where there are no such societies, to be distributed by mail or otherwise, to proper individuals residing in each State, Territory or county, for trial or special experiment, with a request that each recipient shall report the result for the use of the Patent Office.

To insure the free and speedy transport of each small packet of cuttings or seeds, an appropriate stamp might be placed upon it, bearing the imprint of the name of the member of Congress or Territorial delegate in whose district or territory any such society may be located, or in which any Secretary of State or Territory, or County Clerk may reside.

The apportionment of the packets sent to the State societies might bear a stamp containing the name of the Senators of each of the States respectively. This change can only be effected by an amendment in the postal law, and necessarily would come before the Committee on Post Offices.

Very respectfully, your obedient servant,

D. J. Brown.

Hon. David P. Holloway, Chairman of the Committee on Agriculture, House Representatives, United States.

BUTTER MAKING.

Editor Ohio Farmer.—*Dear Sir:*—In the 43d number of the current volume of the *Ohio Farmer*, I observe an inquiry from Mr. Alden, on the subject of making butter from sweet cream. He affirms that "Agricultural books and journals tell us that butter cannot be made from sweet cream." And then declares that the life-long practice of his mother contradicts the teaching of the "books" on this subject. There is, perhaps no branch of domestic economy the theory of which is so little understood by those who practice it as the art of *butter making*. The first truth to be learned on this subject is, that butter is not *made* by churning! All the butter that can, by any process, be procured from cream or milk, exists in the milk when drawn from the cow, and the business of the dairy-man is to ascertain how it can be most perfectly separated from the other proximate elements of the milk with the least labor, and carry with it the fewest impurities, or substances other than butter. In newly-drawn milk the butter exists in the form of exceedingly minute g'obules, each wrapped in a very delicate membrane of cheesy matter (casein) and floating promiscuously through the fluid. If the milk be suffered to stand at rest for a few hours, butter being lighter than milk, the globules find their place at the surface acccording to the laws of gravitation. If the new milk be heated to 180° and suffered to cool, the globules, swelled by the heating, their envelopes thickened by accumulating cheesy matter from the milk, will rise to the surface more rapidly and form a heavier and thicker coat of cream which, on being churned will yield

more pounds not indeed of butter, but of a compound of butter, casein and sugar of milk, which has a very rich flavor when fresh, but soon become rancid and unfit for the table. But to the question of Mr. Alden. Churning is but the breaking of these globules, that the particles of butter may cohere together and form a mass more or less solid. This at first would seem to be a mere mechanical action, but connected with it, or least accompanying it, are chemical changes, whose invariable presence leads us to infer that they constitute an essential part of the process. These are, first, an elevation of temperature, frequently amounting to 10°, if the "butter comes" rapidly. And, second, the formation of lactic acid; for if milk be churned as soon as drawn from the cow, and butter be separated, the butter-milk will be found to contain acid, though it may not taste very sour. Whether this lactic acid is a cause or an effect of the separation of the butter, has not been satisfactorily settled, but that it is always present after butter has been churned, is a well ascertained fact, and this fact, all scientific books on the dairy assert. Johnson, Ballantyne, Ayton and Traill all teach that "butter made from sweet cream is less in quantity, and require more labor to produce it, and is therefore unprofitable." In this they admit that it may be thus made. But that sugar of milk is converted into a lactic acid, when butter is churned, is a well ascertained fact.—*Ohio Farmer.*

A NEW STONE FOR STREET PAVING.

A GOOD article for pavement is one of the most pressing demands now made upon the government of this and other commercial cities. The safety of persons and animals, and economy, in a matter involving so much expense, and where so much is at hazard which money cannot buy, cannot fail to engage the attention of all conversant with such matters. Various inventions have been made and tried, with various success. New projects are constantly started, having more or less claim to consideration. Among other claimants, we invite attention to a new stone, not hitherto used for this purpose, found in large quantities, we are informed, in Dutchess County. Our attention has been called to it by Messrs. Bell & McEntee, of Kingston, proprietors of the ledge, we believe. It is a peculiar style of granite, nearly white from the abundance of its quartz, in a mountain, forming one of the ranges of the Catskills, and is known there, as the Esopus stone. It is used extensively for mill stones, and while it is difficult to reduce it to powder it is still more difficult and apparently impossible to reduce it to a polish. Hence it promises, to be both durable and safe for horses.

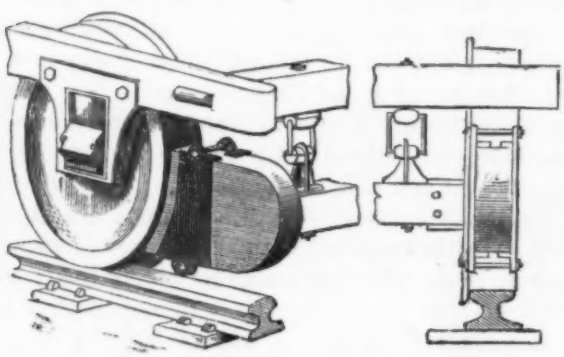
These stones are taken frequently on high ascents, and the roads leading to them are in many places bedded with this stone; forming inclined plains of several rods each, in length. In drawing heavy loads over these beds it has been a subject of remark among the quarrymen that a "horse would pull his shoes off sooner than slip." Heavy loads have been daily drawn over these nature-made pavements, and man has had only to observe, to determine what should be done in a city so sadly situated in regard to its streets as New-York.

BARREL MAKING MACHINE.

We had an opportunity, a few days since, of witnessing the operation of an ingenious machine owned by the Livermore Manufacturing Company, for making barrels and tight casks. The machine is in operation at Alcott's Mills, Broadway, Cambridgeport, Mass., and is worth a visit from those interested in such matters. The strips of wood which are to be made into staves having been first heated, are passed through a machine containing numerous rollers, under which they receive the requisite *bend*, both lengthwise and traversely. They are then put into another machine, where by an ingenious movement they are cut at both ends, grooved, and planed at the sides, so that they are turned out perfect staves of uniform length and width, all being precisely of the same shape, in all respects. Sixteen of these make a barrel. There is a separate machine for cutting out the round heads of the barrels. The machine which bends the staves turns out enough for 600 barrels in a day. Four of the other machines, in operation at the same time keep pace with it in completing them. The work is expeditiously and easily done. It is claimed that the barrels thus made are fifteen per cent. stronger than those made by hand; and the staves being precisely uniform, the business of putting them together becomes very simple. The stock is seasoned before passing through the machine, and the barrels are thus made perfectly tight and not liable to shrinkage. The apparatus deserves the attention of dealers in flour and provisions. The number of barrels used in this country is immense—it is stated that not less than fifty million in a year are required for the ordinary demands of business.

Under these circumstances, a machine which abridges the labor of manufacture and improves the quality of the article, becomes especially valuable. —*Exchange.*

PAIGE'S ADJUSTABLE CAR BREAK BLOCKS.



The frequent pressure of the break upon the periphery of the wheel necessarily produces a rapid waste of material, whether it be iron, or wood, and leather. Each of those substances have been used, and perhaps each has some advantage over the others. But the cheapest material, of course, is wood, and

if the block can be so arranged as to allow of frequent change at a trifling cost, then the great object in view is, so far, already realized. But if any plan can be devised by which a partial adjustment of the same material can be secured, the material itself being also cheap, then there would seem to be no further room for improvement, for, as already stated, wear is inevitable. So far as we can percieve, this has been done by the inventor named at our caption. A wooden block is brought into contact with the surface of the wheel, and is so arranged, in a socket, that it can be adjusted, by the rise of screws, or to any desired position. As it is worn away by friction, the block is placed in the socket nearer to the wheel, until its material is almost entirely destroyed.

Two stout plates of iron confine a hard plank of suitable width, which may be adjusted by bolts, at any desired distance from the wheel. All that is necessary to effect this change is to loosen the bolts, driving the block forward in the socket and then re-tighten it by turning the screws or bolts.

This block has been in use on the Hudson River Railroad about six months, and but three out of the eight blocks have required any change, and these three required attention only because the spring which forces the block from the wheel was too weak. Other railroads have the same block in use as an experiment, and with all it is highly successful. The whole arrangement is readily seen by a glance at the annexed engraving.

The beams now in use may be employed in attaching these blocks with very little expense, no change being necessary except the fitting of the ends to the socket. The agent for this patent is C. Dinsmore, of the "Railroad Guide."

English Patents.

An improved construction of Gun-lock. By John Coney, of Newhall, Hill, Birmingham.—The object of this invention is to simplify the construction of gun and pistol locks, and also, at the same time, to provide a simple means for preventing the premature discharge of fire-arms. In carrying out his invention the patentee connects the seer with the hammer, so that they shall move together under the action of the main spring. The seer is provided with retaining notches for half-cock and whole-cock, which notches catch against the V-edge of a bearing pin projecting from the inner face of the lock-plate, and thereby hold the hammer at the required position. The trigger is so arranged with respect to the seer (upon which it acts to discharge the piece,) that when the lock is at half-cock, the trigger will be out of reach of the seer, and therefore, if accidentally pulled, will not act upon the lock. This advantage is obtained by reason of the seer, through its direct connection with the hammer, being caused to travel with the hammer.

Improvements in Marine Steam-Engines. By James Biden, of Gosport, Hampshire.—This invention consists in feeding the boilers of marine steam-engines with fresh water, obtained by the condensation of steam after having been employed in the steam-cylinders. The manner of carrying this object into effect is as follows:—Pipes leading from the cylinders are

passed into the water outside of the ship at one side thereof, and carried round from the stern to the other side of the ship. They then enter and open into a reservoir in the hold or other convenient part of the ship. This reservoir is formed with two compartments, one above the other, and the pipes communicate with the lower one thereof. The upper compartment is kept filled with fresh water, and it communicates with the lower compartment by means of a ball-cock or float-valve; and the lower compartment communicates, by means of a pipe, with the atmosphere, to allow any uncondensed steam to blow off. As the steam from the cylinders passes through the before-mentioned pipes it becomes condensed, and the fresh water, produced by such condensation, will flow into the lower compartment of the reservoir, whence it may be pumped, as required, into the boilers. A pipe also leads from the steam-chest to the condensing-pipes, so that when the engine is not at work, any excess of steam may be condensed and conducted into the reservoir. When the water in the lower compartment of the reservoir is reduced below its determined level, the ball-cock or float-valve will fall and open the communication with the upper compartment, so as to allow water to flow from that into the lower compartment, and thus keep the supply therein at its appropriate height. The condensation of the steam may also be effected by allowing the sea-water to enter into the ship, and to flow through a suitable channel within the hull; through which channel the pipes for conducting the steam from the cylinders are made to pass.

A New Metallic Alloy. By François Joseph Anger, of Stamford street.—In conjunction with the metals ordinarily used in the manufacture of copper alloys the patentee mixes certain compound substances which are not in the metallic state, but which, during the process of the manufacture, become elementary, and partly enter into the composition of the alloy, and impart to it properties which it otherwise would not possess—being remarkable in its resemblance to gold, not changing color by use,—and being dense, malleable, ductile, homogeneous, and sonorous, to a marked degree.

The following is the process:—In a crucible the patentee first melts 100 parts of good copper, and, while in a perfect state of fusion, he adds 17 parts of zinc, 6 parts of magnesite, or substance of a like nature, though perhaps differing in name, 3.60 parts of ammonia or salt of ammonia, 1.80 parts of quick-lime or other calx, and 9 parts of crude tartar. The crucible is then covered, and the whole allowed to come to a complete state of fusion; when it may be poured into moulds of the necessary shape, or into ingots or bars, to be afterwards shaped for articles of use. If the metal be required of a more tenacious character, tin may be substituted for zinc. According to the ductility or shade of color of the metal which may be required, the proportions of zinc, tin, magnesite, ammonia or salts, quick-lime, and crude tartar, are varied.

An Improvement in Dyeing Cloth. By Thomas Richardson, of Leeds.—The main object of this invention is to produce a permanent black dye in woolen cloths, and at a less cost than the best black dyes are at present obtained. For this purpose the patentee mordants the cloth with bichromate of potash, and then submits them to a bath composed of sulphate of indigo and other suitable dyeing materials.

In order to prepare, say, six ends of cloth, he pours into a vesssel of the ordinary kind used by dyers, any requisite quantity of water, and adds thereto four pounds of bichromate of potash, three pounds of red argol (bitar-

trate of potash,) and six pounds of commercial sulphuric acid. The contents of the vessel are heated to the boiling point, and the woolen cloth is placed therein and boiled for one hour, it being turned over by means of a winch to keep it even. The cloth is removed from the vessel, and hung over a horse-tree to drain away the superfluous liquor; after which the cloth is ready to undergo the dyeing operation.

The dyeing liquor is prepared in a second vessel, similar to that used in the first operation. For this purpose the vessel is filled with water; and one hundred pounds of logwood, four pounds of camwood or other red wood, two pounds of fustic, four pounds of the sulphate of indigo, and three pounds of sulphuric acid are added thereto. This mixture is heated to about 200° Fahr. and the cloth is then entered; the liquor being kept to boiling point for about one hour and twenty minutes. During this time (which will in general suffice for completing the dyeing operation) the cloth is turned over frequently by means of a winch to insure the thorough exposure of the whole body of the fabric to the dyeing liquor. It is next removed from the dye vessel, and rinsed in a washing machine along with a little fuller's earth. With a smaller proportion of bichromate of potash and logwood than is given above, a blue color, resembling indigo dyed blue, may be obtained. When a full black is required, it will be found an improvement to use a little acetate of lead.

Improvement in Preparing Pulp or Pulpous Material, applicable in the Manufacture of Paper, and for other useful purposes. By Francis Burke, of Woodlands, Montserrat, British West Indies.—This invention consists of a mode of reducing vegetable substances to a state of pulp, applicable to the manufacture of paper and for other useful purposes.

The object of the inventor is to convert the fibres of vegetables into pulp, without having recourse to the process of separating the fibrous matter from the other component parts of vegetable substances; and to effect this object, he adopts means for simultaneously or in one process reducing the fibres to pulp, and separating the pulp from the gummy and other vegetable matters with which they are combined. The vegetable substances to which the process is applicable are the plants known as the plantain, the banana, and the aloe, and any other vegetable substances containing fibrous matters from which the other matters contained therein can be separated by water, whilst undergoing the operation hereinafter described.

When necessary, the vegetable matter to be operated upon is first cut, crushed, or bruised, for the purpose of reducing it to such a state of division as will permit of its introduction into a mill to be ground. If the vegetable be plantain, banana, aloe, or any other similar vegetable substance in a green state, it is preferred to crush it between rollers, so as to deprive it of its fluid matters.

To reduce the vegetable matters to pieces of a convenient size, a chaff-cutter, saw, or other convenient means may be used, according to the nature of the material. The materiai thus prepared, is ground in a mill made of a pair of plain stones, similar to those of an ordinary flour mill, with the eye of the runner or upper stone somewhat enlarged, so as to facilitate the admission of the material.

Either the upper or the lower stone of the mill may be made the runner; but it is most convenient to have the upper stone the runner, and motion may be given to it in the same way as in ordinary flour mills. The material to be ground is fed simultaneously with a stream of water into the eye of the

mill; the supply of water being sufficient to convert the vegetable material when round into a fluid pulp.

The water used may be either hot or cold, but cold water is preferred and when necessary, any chemical agent may be dissolved in it to facilitate the separation of the fibres from the other vegetable matters with which they may be mixed. The vegetable fibres, as they are ground to a pulp, are thrown out at the periphery of the stones, round which a trough is placed to receive it; from whence it runs into suitable sieves, by which the fibrous pulp is separated from the water, which passes away carrying with it the soluble matters, and also many minutely-divided insoluble or non-fibrous matters which may have been separated from the fibrous matters by the action of the mill.

The pulp of vegetable fibres, thus prepared, may, if desired, be bleached and otherwise treated in like manner as pulp prepared or obtained in any other manner, and may also be used or applied in the manufacture of paper, millboard, or papier mache, or for any other purpose for which it may be applicable The pulp, thus prepared, may be compressed into forms or masses, so as to be stored for use, or more conveniently transported to a place of manufacture.

Improvements in Apparatus for Copying Letters and other Documents. By Alexander Robert Terry, of Adelphi-Terrace.—The object of this invention is to combine apparatus with the cover of a book (composed of suitable paper) in such manner that the act of closing the book shall be the means of copying a letter or letters or other written documents inserted between the leaves of such book. For this purpose, a metal frame is applied to each lid of a book, and when the book is closed they are connected together by links, which are attached to one frame, and hook on to projections on the frame of the other lid. By this means the two frames are drawn thightly together, and the papers between the covers is compressed so as to yield copies as effectually as when a copying-press is used.

Improvements in the Manufacture of Tyres for Wheels. By Herbert Mountford, of Derby—This invention has for its object improvements in the manufacture of the tyres for wheels, in order to adapt the wheels to run at different times on hard land and soft, as circumstances may require. For this purpose the tyre for the wheel is rolled, on its exterior surface, with a projecting longitudinal rib, which may be square or rounding: so that when the wheel is on a hard road, or surface, the tyre will run on its longitudinal rib; but when on soft land, the rib will penetrate, and the whole breadth of the tyre will rest on the land.

The various forms of tyre, according to this invention, are made by grooved rollers, employing wrought-iron or steel, or wrought-iron and steel combined, or an any other metal.

Improvement in the Construction of Harrows. By Edward Hammond Bentall, of Heybridge.—This invention relates to the fixing of the tines or teeth of harrows in their sockets in such a manner that they will be prevented from working loose. To this end, square or rectangular socket holes are punched in the beams to receive the squared or angular part of the stem of the harrow-teeth or tines: and through the cross bars round holes are punched, through which the threaded end of the tine projects to receive a nut, as usual. When the nut is screwed up tight, it is secured in its place by riveting or otherwise securing to the bar an abutting piece, which will

fit close against one side of the nut, and thereby prevent it from turning on the tine; and the tine itself being prevented from turning on its centre by fitting into the square or rectangular socket in the beam.

Improvements in the Manufacture of Ordnance Shells and other Hollow Vessels. By Richard Peters, of Union-street Borough.—This invention consists in the employment of a hollow mould, made in two or more parts, into which the metal or other material to be moulded, is poured through a pipe, which descends about midway into the mould,—and imparting to the mould, after a sufficient amount of metal or other substance in a fluid or a semi-fluid state has been poured therein, two centrifugal motions at right angles or nearly so to each other. The centrifugal force acting in all directions, distributes the contents of the mould evenly all round the inside thereof; while the internal pipe acts as a vent for the escape of air and gases, and prevents any considerable quantity of material (if any) being forced therefrom. On stopping the two motions and opening the mould, the hollow article will drop out perfectly formed. When making a shell, a ferrule, threaded on its inside, is set round the internal pipe and being incorporated with the shell, it will be ready for receiving a fuse threaded with a corresponding screw.

Improvement in the Manufacture of Gun-Barels, Pipes, and Tubes. By Samuel Pearson, of Woolwich.—This invention refers to the manufacture of twisted barrels and pipes. According to the method of forming such barrels as now practised, a strip of metal is wound spirally round a centre,—the edges of the strip forming butt or scarf joints, which are found in practice to be faulty. Now this improvement consists in forming barrels and pipes of two **V**-shaped strips of metal, which are wound spirally round a centre; the base of the **V** in one strip being placed nearest the centre, while the apex or narrow part of the upper **V**-shaped piece is placed downward, or nearest the centre; whereby the spaces between the first strip will be filled up, and after being rolled and welded in the usual manner, or otherwise finished, will form a perfectly tight and solid barrel or pipe.

Improvement in Coating Wrought Iron. By Edmund Morewood, and George Rogers, of Enfield.—In the manufacture of japanners' ware, painted work, and for a great variety of purposes, very large quantities of tin plate, and sheets of iron coated with alloys of tin, or zinc, are used, and in coating these and also other forms of wrought-iron, it has been usual to dip the iron into the melted coating metal, by which the iron has become coated with a larger proportion of tin or of its alloy, or of zinc, than is required for japanned ware, painted work, and a great variety of other purposes. Hence, the cost is unnecessarily increased, and the iron, by being dipped into the melted metal, is more or less injured in its toughness, and is rendered less flat and even on its surfaces. In some cases it has been the practice previous to dipping sheets, plates, and other forms of wrought iron into melted tin or zinc—to deposit upon them a thin coating of tin from a solution of that metal; and such deposited coating of tin on wrought-iron, the patentees have found sufficient when protected, as herein described, for japan-ware, painted work, and for a variety of other purposes.

The present invention consists in giving to sheets, plates, or other forms of wrought-iron, a coating of tin from a solution (omitting the dipping in melted tin or its alloy, or zinc), and in afterwards applying a non metallic

coating or coatings of a material or compound which is repellent of moisture, and which may be used at so low a temperature as to leave the iron as nearly as possible with its original form and toughness. For this coating the patentees prefer a resinous or such like matter as will not interfere with but rather aid the process of soldering the iron, when it may be desired to do so.

Sheets, plates, or other forms of wrought-iron having been coated by a deposition of tin from a solution (which, separately, is not claimed) are to be washed with water (for which purpose, a stream of running water, either hot or cold, should be used), in order to free them as much as possible from the solution of tin or other matter which they may have taken up.

When well washed, the pieces of wrought-iron are coated with varnish or japan. The preparation preferred, is about two-thirds rosin, and one-third grease or tallow—keeping the temperature of the mixture at about 240° Fahr., or at such a point, that on withdrawing the metal from the hot mixture, the moisture will have been boiled off from the surfaces, and a thin coating of the mixture will be found to cover the metal. This thin coating is reduced by rubbing the metal in hot bran or sawdust, placed in a pan, and kept heated with boiling water underneath, or by other suitable arrangements. Or the inventors dry the solution-tinned articles in an oven or over a coke fire) or otherwise, immediately after washing, and then, instead of coating them by dipping into the before-mentioned melted mixture of rosin and grease, they dip them into a solution of rosin and tallow dissolved in coal of naphtha in the proportion of two ounces of tallow and ten ounces of rosin to one gallon of coal naphtha, at the ordinary temperature of the atmosphere; and after allowing the articles to stand in order to dry, they immerse them in the solution of shellac and rosin, hereafter mentioned. The sheets, plates, or other articles coated with rosin and tallow are dipped into a solution of shellac, or shellac and rosin, in the proportion of three-fourths shellac to one-fourth rosin, dissolved in wood naphtha or alchohol, say about three quarters of a pound of shellac and one quarter of a pound of rosin in two gallons of wood spirit or strong alcohol, of fifty to sixty degrees above English proof; by which means, a coating which will be moisture repellent, is obtained. By thus coating sheets, plates, and other forms of wrought-iron with tin from a solution, and afterwards protecting or preserving the same by a moisture-repellent coating or coatings of the above-described character, a manufacture is produced highly usesul for a great variety of purposes—the sheets and plates, nearly, if not entirely, retaining their flatness and the iron its toughness and the sheets or plates admit of being bended or shaped; and such coated metal is valuable for a great variety of useful purposes.

Improvements in Dyeing or Coloring the Hides and Skins of Animals. By Isaie Lippman, of Rue Geoffroy Saint Hiliare, Paris.—This invention consists, in the first place, in submitting hides and skins to the process of dyeing before they are tanned. According to the plans now in use the skins or hides are usually tanned first, and then dyed or colored afterwards; but by reversing these processes, the patentee has discovered that considerable advantages are obtained. By dyeing the skins before tanning them, processes and materials which are cheaper and better than those usually adopted, may be employed; a more permanent color will also be obtained than when the skins are subjected to the ordinary process, and will even resist the action of acids. There is also considerable economy in the labor incidental to the pro-

cess, and the skins or hides, when prepared according to the improved plan, are more supple and softer than when the ordinary process is employed.

The second improvement relates to a mode of dyeing the skins or hides so as to present a variegated or marbled appearance. This is effected by simply crumpling the skins up, and tightly securing them in this state while they are submitted to the action of the coloring matter in the dyeing vat. The result will be, that the coloring matter will only penetrate and act on certain parts of the skins, leaving certain other parts unaffected, and upon unfolding the skin it will present a mottled appearance. This operation may be repeated two, three, or more times in different colored dyes, the skins being of course unfolded and crumpled up again previous to every operation, so that fresh surfaces may be presented. This mode of mottling or ornamenting skins may be employed either before or after the skins or hides have been tanned.

The third head of the invention relates to a method of imparting a metallic lustre to skins or hides. For this purpose, the skins are submitted to the action of certain dyeing materials which have the property of communicating this appearance thereto. The dye-wood which is found most suitable for this purpose is logwood (known in France as *bois de campéche ;*) but other varieties of dye-woods may be employed under certain circumstances. When the skins have been submitted for a suitable length of time to the operation of the dye, they are afterwards subjected to the action of chemical salts (by preference alkaline salts), which will cause the metallic appearance to come out on the surface of the skin or hide.

The patentee claims, "First,—submitting hides or skins to the process of dyeing before being tanned. Second, the method herein described, or any mere modification thereof, of imparting to skins or hides a mottled appearance. Third,—the method herein described, or any mere modification thereof, of imparting to the surface of hides and skins a metallic lustre."

ROUTE FROM NEW-YORK TO PITTSBURGH.

CAMDEN AND AMBOY RAILROAD, PENNSYLVANIA CENTRAL RAILROAD, READING RAILROAD, SUSQUEHANNA AND DAUPHIN RAILROAD.

We propose describing sundry routes from this city to distant points, as occasion may offer, as a sort of general guide to the traveler.

The route from New-York to the Great West, by the Camden and Amboy railroad to Philadelphia, thence to Pittsburgh by the Pa. Central, is one of the most picturesque and romantic in the Eastern portion of the Union. Commencing at this city, we take the steamer for Amboy, and passing through the bay of New-York, we obtain a fine view of Castle Garden, Governor's Island, the bay, and the city, and are regaled with the fresh sea-breeze. Passing New-Brighton on Staten Island we enter the Kills, and are soon at Amboy. Here the cars are taken for Camden, and passing through the southern portion of New-Jersey, we arrive at Philadelphia in five hours from starting. This road is under the superintendence of W. H. Gatsmer, Esq., whose aim is to make his passengers safe and comfortable. From Philadelphia to

Harrisburg are two routes, one by State line, the other, by the Reading railroad to Auburn, thence by the Susquehanna and Dauphin railroad. Leaving Harrisburg four miles, we cross the Susquehanna over an arched bridge, and here the bridge, the river and the mountains, taken together, and combining in one view the beauties of nature and art, form one of the most beautiful and interesting views in the country. We now pass up the Valley of the Susquehanna along a continuously romantic region, consisting of mountains, hills, and vales, till we reach the Junietta, thence up the Junietta to Altoona. Here the company have their depot, and here resides Mr. H. J. Lombairt, the efficient superintendent of the road, to whose promptness, skill and energy, together with his discretion in the choice of officers, the company are greatly indebted for the regularity of their trains and the safety of their passengers. Here is also one of the finest hotels on the road. Mr. Thompson is the proprietor.

Leaving Altoona, we commence ascending the Alleghanies, running up a grade of 92 feet to the mile for a distance of 12 miles. The road winds along the spurs of the mountains. Upon the right, rise the towering cliffs of the Alleghanies, and on your left you look down some hundreds of feet into a chasm below, while the eye catches the distant peaks of the mountains, blue from their distance. Continuing along thus till we arrive near Cresson, we pass through a tunnel, described before in this journal; from thence to Johnstown, where is the terminus of the canal. Here is a large establishment for manufacturing iron. We continue on down the Alleghanies, passing the battle-ground of Braddock's defeat, and arrive at Pittsburgh in 13 hours from Philadelphia.

Miscellaneous.

RAIN ON THE ATLANTIC.—Lieut. Maury computes the effect of a single inch of rain falling upon the Atlantic Ocean. The Atlantic includes an area of twenty-five millions of square miles. Suppose an inch of rain to fall upon only one-fifth of this vast expanse. "It would weigh," says our author, three hundred and sixty thousand millions of tons; and the salt, which as water, it held in solution in the sea, and which, when that water was taken up as vapor, was left behind to disturb the equilibrium, weighed sixteen millions more tuns, or nearly twice as much as all the ships in the world could carry at a cargo each. It might fall in a day; but occupy what time it might in falling, this rain is calculated to exert so much force—which is inconceivably great—in disturbing the equilibrium of the ocean. If all the water discharged by the Mississippi River during the year were taken up in one migthy measure, and cast into the ocean at one effort, it would not make a greater disturbance in the

equilibrium of the sea than would the fall of rain supposed. And yet, so gentle are the operations of nature, that movements so vast are unperceived."

How Much Should a Cow Eat.—Cows to give milk, require more food than most farmers imagine. S. W. Johnson, writing from Munich to the *Country Gentleman*, gives an interesting report of some experiments which have been made in Bavaria, from which the following is an extract:

"Our trials have confirmed the view that cows, to give the greatest possible quantity of milk, must daily receive and consume one-thirtieth of their live weight in hay, or an equivalent therefor. If more food be given it goes to the formation of flesh and fat without occasioning a corresponding increase in the yield of milk, but if on the contrary, less food be furnished, the amount and value of the milk will be greatly diminished."

Sowing Turnips.—Do not forget that about the last of July or forepart of August is a good time to sow a patch of common turnips. The soil for turnips should be moist, rich and mellow. Ground where corn has failed, or stands too thin will answer, if clear of weeds and well stirred. Or a piece of clean wheat stubble may be ploughed for the purpose; also patches in the garden where peas or early potatoes have been harvested. Turnip-seed is plenty and cheap in most stores where seeds are sold. It is best to buy enough at once to re-sow with in case dry weather or the fly should destroy the first sowing. The seed, if fresh, will keep good for three or four years.

Dubuque and Pacific Railroad.—The directory of this Company have published a circular in which they state that the first thirty miles of the Road will be open to Dyersville, Nov. 15th, 1856; and asking the counties of Delaware, Buchanan and Blackhawk to subscribe each $250,000 to the capital stock of the second division of the Road extending to Cedar river.—*Pella (Iowa) Gazette.*

The Monster Gun.—The boring of this huge gun, which is now being constructed at the Mersey Steel and Iron Company's forge, Liverpool, is all but completed. When finished the barrel will be 15 feet long; it will he 27 inches in diameter at the muzzle, or 84¾ inches in circumference; and 44 inches in diameter at the breech, or 138 ¼ inches in circumference. The bore will be 13 feet 6 inches long, and 13 inches in diameter. When completed it is estimated it will have cost the company, £3000 in material and labor alone. The gun is expected to be ready in about six weeks, and, with the trunnions complete, will weigh something over 24 tons. When finished it will be drawn through Liverpool by twenty or thirty of the Company's fine horses, and will ultimately be taken to Waterloo to be tested. The charge will be over 100 lbs. gunpowder, with one of the shots of 302 lbs. Mr. Clay, the manager of the works, is superintending the whole of the work.

Cause of Boiler Explosions.—Mr. Fairbairn was some time since appointed by the British Association of Science to make experiments in respect to ascertaining the cause of boiler explosions. He therefore had a boiler made so as to determine not only the proportionate strength of the boilers, but also in relation to their management. The boiler was 17 feet in diameter, with two internal tubes, 3 feet in diameter. It stood a pressure of 80 lbs on the square inch, but at 100 one of the tubes collapsed. The object was to discover a means of proportioning the strength of all the parts, because,

as Professor Fairbairn believes, the majority of explosions arise from an excess of steam.

The New Rifle.—The peculiarities of a new rifle are, that it has a moderated groove, is a foot shorter than the United States rifle, and can readily be fired ten times a minute and from this to sixteen times by an expert hand. It is loaded at the breech, which receives the cartridge by an operation not unlike the opening of a pair of scissors, and with nearly the same facility. The small pocket pistols are calculated to throw a Minnie ball one hundred yards; a cavalry pistol, with a range of five hundred yards; a rifle, suitable for infantry, with a range of one mile; and a large gun will throw a two-ounce ball, or a small shell, one mile and a half. It is claimed for this new weapon that it will set on fire a house or a ship at a distance of nearly two miles. A good marksman has hit a target a foot square, at a distance of a third of a mile, 97 out of 100 shots, with this rifle; and it is said that it will throw a ball with sufficient force to perforate an inch board at the distance of a mile.

Effect of the Atmosphere upon Marble.—Professor Henry, of Washington, has been investigating—under the direction of the government—the causes which produce discoloration in marble. This is found to be owing to the previous absorption by the marble of water, holding in solution organic matter, together with the absorption of water from the mortar in which the stones were placed. To illustrate the process, Professor H. supposed a fine capillary tube with its lower end immersed in water, whose internal diameter was sufficiently small to allow the liquid to rise to the top to be exposed to the atmosphere. Evaporation would take place at the upper surface of the column, and new portions of water would be drawn up to supply the loss; and if this process were continued, any material which might be contained in the water would be found deposited at the top of the tube, the point of evaporation. If, however, the lower portion of the tube were not furnished with a supply of water, the evaporation at the top would not take place, and the deposition of foreign matter would be exhibited, even though the tube itself were filled with water impregnated with impurities.

Improved Railroad Axles.—An Irish mechanic has taken out a patent at the British office, for some improvement in axles and axle-boxes of engines and carriages in use on railways, which consist, first in fitting the cylindrical journals of axles with one collar only, instead of two, in order to reduce the friction; second, in constructing axle-boxes so that the main portion of the same, and the step or bearing for the axle journal, can be removed without lifting the carriage off the wheels. For this purpose the lower part of the axle-box is made to open at the top, in order to receive the step or bearing, and that portion of the box which forms the upper grease-chamber or hopper.

Manipulation of Steel and Iron.—The difference between common iron and steel is in the carbon of the latter; but if iron be heated to a white heat and plunged into cold water, it becomes very hard. Mechanics take advantage of this in making axles and collars for wheel-work, for it is easily filed and turned in a soft state, and afterwards hardened. Moulders who make wheels are often embarrassed by the chemical property in iron, for as the metal is poured in the mould of moist sand the evaporation of water carries off the heat and cools the iron so quickly as to make it extremely hard. This is

common in such portions of the metal as have run the greatest distance from the aperture of reception. The only remedy for this is to have the sand as dry as possible and numerous apertures.

NEW METHOD OF PROPELLING STEAMBOATS.—Some one in Sing Sing, proposes a method of propelling boats which, he states, entirely dispenses with paddle-wheels or shafts of any kind. Instead of the paddle-wheels or propellers, atmospheric air performs the business of propelling. Eight large bellows or air-pumps, making four sets, with two in each set, are placed within the boat and worked by the engine, each one of the two alternately with the other one. Pipes or trunks leading from each bellows or pump unite each set, and are carried to the bottom of the boat for a discharge of the air from the bellows, as follows:—Air is drawn into the bellows from above the boat, through pipes, by the action of the engine, and forced out through the bottom of the boat, backward, against the water—an open channel or curb being provided beneath the boat to guide the passage of the air upon each side, along the keels to the stern of the boat.

PROGRESS AND EXTENT OF THE PHOTOGRAPHIC ART.—The city of Paris alone contains 110 establishments exclusively occupied in the manufacture of materials used by photographists, and some of them employ one hundred and thirty workmen. There are seven hundred photographists in Paris, some of whom execute, ninety or one hundred portraits a day, the average being five portraits a day by each photographist, costing fifteen cents each, and sold at an average of $6. The stereoscope is also a branch of photography, in which one Parisian firm has invested $120,000.

IRON RIGGING FOR SHIPS.—Two lines of ships of about eight hundred tons each, are running between Glasgow and Montreal. They are built of iron, and all their shrouds, stays, backstays—in fact, all their standing rigging is made of wire rope, with hemp centres like that used on some inclined planes of roilroads. This rigging is lighter than hemp of equal strength, holds less wind, and is not subject to stretch after being once set. Each shroud or stay terminates in a screw, by which it can be strained to any desired extent. An improvement in the hanging of the yards is also adopted, by which the yards are made to turn in their lifts, and roll up the sails upon them, from the deck.

NEW SURVEYING INSTRUMENT.—An apparatus for delineating sections of surveys for railroads, canals, &c., and for computing the solid contents of cuttings and fillings, has been invented. It consists of a standard three feet high, supported on a carriage having three wheels. From this standard is is supported a pendulum, the rod of which extends beyond the suspension point, and there actuates a series of levers as it vibrates. When it is desired to delineate a section of a railroad survey, it is drawn on the ground, in the proper line, and of course the undulations give a proportionate amount of vibration to the pindulum, which again actuates the series of peculiarly combined levers mentioned.

PLATING METALS.—The London *Mechanics' Magazine* contains a description of the process recently patented in that city, for coating lead, iron or other metals with tin, nickle or alumina. The first part of the process consists in a mode of preparing a solution of the metal with which the articles are to be

coated or plated, for which purpose the inventors proceed as follows:—For tin, they dissolve metallic tin by nitro-muriatic acid, and then precipitate the tin by an alkali, or alkaline salt, preferably by the ferro-cyanide of potassium; they then mix sulphuric acid or muriatic acid with the precipitated oxide of tin, to which is added a portion of water; these are boiled in an iron vessel with a small portion of ferro-cyanide of potassium; the liquor is then filtered, and the solution is completed.

Prof. Silliman on the Internal Heat of the Earth.—Prof. Silliman takes a decided position in favor of the theory that the centre of the earth is a fused mass of mineral matter. His chief argument is the phenomenon of volcanoes, which he calls the earth's chimneys and escape pipes. There are hundreds of them always in operation—hundreds are dormant; they are all over the earth and the seas surface, and they come from the bowels of the earth. The fiery sea in the centre of the earth—says the Professor—boils over the tops of its chimneys, and when these chimneys become choked, it forces new vents, breaking out even under the sea.

The Iron Discovery in Liberia.—Dr. Hays, the assayer to the State of Massachusetts, has examined specimens of the iron recently discovered in Liberia and subjected them to scientific analysis, with the following result:—Its chemical composition is pure iron, 98.40; quartz grains, magnetic oxide iron crystals, and zeolite, 1.60. There are no other metals present—a fact which prevents the placing of this iron in the class of meteorolites, and the absence of carbon in any form completely removes all doubt in regard to its being possibly of artificial formation.

An Improvement in Carriages.—An invention for making the connection of the pole or the shafts of a carriage more safe, has been exhibited in Concinnati. A small block of vulcanized India-rubber is inserted in the space, which, in what is called the clip or shackles of the shaft, intervenes between the clip-tire and the round head of the shaft, through which the connecting ball is passed. The block of India-rubber holds the ball in its place with a firm but elastic pressure, and entirely prevents it both from rattling or becoming loosened by motion. The application of this contrivance causes the play of the machinery of the carriage to be performed in perfect silence, and by keeping the bolt in its place, and preventing the nut screwed to it from loosening by motion, obviates the liability to accident.

New Material for Paper-Making.—At a meeting of the British Association, the Chevalier Clausson read a paper on *papyrus Bonapartea*, and other plants, which can furnish fibre for paper pulp. The straws of the cereals cannot be manufactured into paper pulp, unless cut before they are ripe, as the joints or knots of the stalks are so hardened by ripening, as to resist bleaching agents. Many grasses contain from thirty to fifty per cent. of fibre, not strong, but easily bleached; ground reeds and canes contain about an equal amount. After examining many kinds, the Chevalier turned his attention to the papyrus, which he found to contain about 40 per cent. of strong fibre, excellent for paper and very easy bleached. He also found that the common rushes contain 40 per cent. of strong fibre, which is a perfect substitute for rags, one ton of them containing more fibre than two tons of flax straw.

Compressible Life-Boat.—The new life-boat of Mr. Berdan, of this city,

is a compressible boat, made of a strong frame of wood, thoroughly braced, covered with very heavy three-ply canvas, coated with India-rubber inside and out; a large air compartment, in the form of a cylinder outside the boat, passing from stem to stern, between the water's edge and the gunwale-bars on both sides, so as to prevent a capsize. The gunwale-bars and ribs are hinged to the keel, so that when the boat is not required for use the ribs can be thrown parallel with the keel, and thus allows the gunwale-bars or guards to fall down on both sides close to the keel, thus greatly compressing the boat.

Pennsylvania Coal.—The whole amount of coal sent to the market from the anthracite regions of Pennsylvania, during the year 1855, is now ascertained to be about six million four hundred thousand tons—an increase over 1854 of about seven hundred and fifty thousand tons. It is fair to estimate that this has brought money into the State at the rate of about three dollars a ton, so that Pennsylvania has realized from her anthracite coal mines over nineteen millions of dollars during a single year. The additional advantage she has gained in the immense amount of profitable labor this coal business yields to a large portion of her population, and the employment it gives to her public works, cannot be estimated.

Pennsylvania, in her coal deposits, possesses a means of wealth which begins to compare with the gold deposits of California. In value our coal product already exceeds that of either of our crops, wheat, corn or oats. Thirty years have built up this enormous and remunerative business. In the next thirty, with greater capital, new railroads and canals, more extended markets, vaster population, and increasing manufactures, the coal product of Pennsylvania bids fair to equal all her agricultural products and to surpass the annual yield of gold from California.—*Phila. Bulletin.*

Remarkable Watch.—At the French Exposition there was exhibited a watch which created much interest and admiration. It tells the name and day of the month, the equation of time, is a repeater, striking the minute as well as the hour; is a thermometer of tolerable accuracy, and winds itself up by the action of its own movement. The price of this ingenious piece of workmanship is 30,000 francs (over $5000.)

Gloucester and Marblehead Fisheries.—The fisheries of Marblehead were at one time the wonder of the whole country, such was their extent and importance. In 1812 the fishermen from that town almost manned our northern ships of war. The fisheries of Gloucester at the present time are at least *three times* as extensive as those of Marblehead were in her palmiest days. Gloucester employed last year 300 schooners, 20,000 tons burthen, and manned by 2980 men. Besides its catch of Mackerel, the largest in this country, (70,000 bbls.) Halibut, and other kinds of fish, it sent to market 98,000 quintals of Cod Fish. In addition to its great fisheries, Gloucester has 10,000 tons of shipping in the foreign and coasting trade, and last year had 207 arrivals from foreign ports, bringing, among other articles, 5000 hhds. molasses, 3,000 hhds. Sugar, 5000 cords Wood, and great quantities of Salt, Lumber, Coal, &c. Rockport, and the adjacent ports, are not included in these statistics, although they are in the district of Gloucester.

Peach Tree Borer—Tansy.—We saw it stated, two year ago, in an agricultural journal that these pests could be driven from peach trees by tansy.

We planted it at the roots of some ten or twelve trees, and not one of them have been disturbed, whilst others are injured badly. This spring we intend planting it around all.—*Newberry (S. C.) Sun.*

The grain crop of Illinois for 1855 is said to be as follows:

Indian corn, bushels, - - - - - - -	180,000,000
Wheat, - - - - - - - - -	20,000,000
Oats, barley and rye, - - - - - -	50,000,000
	250,000,000

The estimate is believed to be under rather than over the actual result.

Type Punches.—The Americans are, as a rule, a quick-witted, intelligent go-a-head-ative race. There are, however, occupations and pursuits requiring a union of skill and patience which this country is not calculated to develop. What would America be without her press, her newspapers, her books? Yet we are assured that there is not a man in this country who can cut a punch for book type. Certain it is that all the best book-type used or cast in this country is made from punches cut in London and Edinburgh. The Scotch, it is generally admitted, are the best cutters of letters; the Germans of music; the French of borders and ornaments. Those who are not familiar with those matters may be surprised to learn that it requires vastly more skill to make a set of steel punches with which to sink the *dies* or *matrice* for an alphabet, than to make the most finished chronometer. It is work requiring a peculiar organism. A punch-cutter, like a poet, an honest man, or a "dead shot," is *born*, not *made*.—*Phonographic Reporter.*

Foretelling the Weather.—In a cloudy morning, it is a matter of importance to the farmer to know whether it will be sunshine or showry in the afternoon. If the ants have cleared their holes nice, and piled the dirt up high, it seldom fails to bring a good day to farmers, even if it should be cloudy till ten or eleven o'clock in the forenoon. Spider-webs will be very numerous about the tops of the grass and grain some cloudy mornings, and fifty years' observation has shown the writer of this, that those little weather-guessers seldom fail in their predictions of a fair day.—*Southern Cultivator.*

"Imports.—The value of imports from the first quarter of this year ending September 30th, is $72,021,950; exports, $60,599,290, or an excess of imports of $11,422,651. In the exports is the sum of $13,671,866 in specie." Jonathan can never get rich in this way.

Havre de Grace.—One hundred men and forty sloops belonging to Havre de Grace, Md., are employed annually, through the proper season, in supplying the market with wild ducks.

A New Rifle.—Eli Thayer has commenced at Worcester, the manufacture of a new rifle, the invention of B. F. Joslin, an ingenious mechanic. The *Spy* says that this rifle is superior to "Sharp's," as it can be more rapidly loaded, and is simpler, safer and cheaper.

Brady's Ambrotypes.—The reputation of Mr. Brady for his Daguerreotypes has been long established. No artist stands higher than he. The art of taking those pictures on glass is one of quite recent date, but is exceedingly

beautiful. It was introduced here by Mr. Brady, who exhibits unrivalled pictures in this style. All lovers of the beautiful may occupy an hour very agreeably by a visit to his rooms, 359 Broadway.

HANDWRITING.—Mr. MacLaurin.—Various systems have been contrived for giving facilities in acquiring a good style of penmanship. Among others, we think very highly of one designed by Mr. MacLaurin. "The arrangement by which this is effected, consists in joining the end of an actual printed model OF A LETTER OR ELEMENT OF A LETTER, *over the surface of which the practice is had* to the beginning *of the same model* so as to secure *continuity and rapidity of movement while in the act of repeatedly overrunning the same surface;* thus Mr. MACLAURIN combines, in the same moment of practice, as must be done in actual writing, the two essential elements of good writing —rapidity and correctness of shape—and insures the result of making a rapid and fine writer of the pupil, which no other system ever did."

S. R. PARKHURST'S BURRING MACHINES.—Mr. Parkhurst has brought a suit against Mr. Israel Kinsman, and Calvin L. Goddard, on his patent for the Toothed Ring Burring Machines, in the United States Circuit Court, for the Southern District of New-York, and recovered against them a decree of $23,220 $\frac{28}{100}$, for Burring Machines, made by them prior to the 11 of March, 1848. From this decree, Kinsman and Goddard appealed to the Supreme Court of the United States, and there he obtained a decree affirming the decree of the court below, and awarding him $285 93 with costs.

The patent is still in force, and all persons and manufacturers, making, selling or using the said machines are liable therefor to the patentee.

The manufactory is at Nos. 203, 205 and 207 Center Street, New-York.

EXTRAORDINARY YIELD OF CORN FROM BROADCAST SOWING.—Major W. S. Mellinger, near Monongahela City, Washington county, informs us that about the first of May he sowed $1\frac{3}{4}$ bushels of corn (broadcast) on one acre of ground, intending to cut it up for fodder. Finding in the summer that it was growing about as rapidly as his corn planted and worked in the usual manner, he concluded to leave it to mature. When the time arrived for harvesting, he found it to yield 150 bushels of ears of good corn, and 5 tons of fodder. He says that he had besides about 30 bushel of nubbins, not counted in the above. If such results could always be anticipated from sowing broadcast, we see no reason why corn intended for feeding purposes should not be planted in this way or in drills, (which would be more scientific.) It would not do, however, to rely upon this kind of planting for seed, as we think there is no doubt but it would degenerate in its originality. We suppose, however, that no reliance could be placed upon this mode, except when a wet season like last summer would prevail, or when the land could be properly irrigated.—*Western Agriculturist.*

PASSUMPSIC RAILROAD.—The following statement has been overlooked in our copy drawer for some time, but it is too good to be lost. Mr. Fairbanks' enterprise is not confined to the manufacture of his scales, nor to his own business merely, but is visible in whatever he undertakes. The following is from a St. Johnsbury correspondent of the Rutland *Herald:*

The Passumpsic Railroad Company has achieved a financial exploit, the like of which has not been accomplished by any other railroad company in the State—no less than the payment of their mortgage bonds on the very day

of their maturity. Seventy-five thousand dollars of these bonds fall due to-morrow, and the company has the cash in the treasury ready to pay them. Most of this is derived from the net earnings of the road, while the small balance requisite to make up the amount is procured by a temporary loan. Considering that the Company has paid its stockholders' dividends, amounting to 18 per cent. on the capital stock, this payment of the bonds must be regarded as evidence either of very good fortune or of very good management.

THE TABLES TURNED.—There was a time when we were indebted to Europe for a portion of our finest machinery, and foreigners regarded American ingenuity as at its climax in the production of wooden nutmegs and clothes-pins. Latterly we have astonished them with our patent reapers and and six shooters, and, at last, they have come to acknowledge that our mechanics are entitled to rank with the best of their own. A further illustration may now be given. Yesterday a sloop arrived at this harbor, bringing from the Jersey shore 40 tons of iron machinery, constructed for use in Scotland, and the same is now being shipped direct to Glasgow. It is designed for the manufacture of India rubber goods, a process in which America is ahead of the world.—*N. Y. Jour. of Commerce.*

THE PNEUMATIC BATTERY is an English invention. The gunpowder is is deposited in its proper place; a gutta-percha syphon tube extends upward from it, and descends into a gutta-percha vessel containing sulphuric acid; another gutta-percha tube extending to any distance necessary for the safety of the operator, connects the vessel with an air-pump. A few grains of white sugar and chloride of potash are mixed together and placed on the top of the gunpowder, then the air-pump is worked, which forces a little sulphuric acid through the syphon, bringing it in contact with the sugar and chloride, and the chemical action produces an instant explosion.

PUDDLING IRON.—James Naysmith, the inventor of the steam hammer, has effected an improvement of great value in puddling iron. It consists in the disengagement of the carbon from the molten metal in the puddling-furnace by subjecting it to the action of currents of steam, introduced as near as possible at the lowest portion of the molten metal, thence diffused upwards, so as not only to mechanically agitate the metal, and thereby keep exposing fresh surfaces of it to the action of the oxygen of the air passing through the furnace, but also to remove the sulphuric and other deleterious substances in the iron, by thus making the oxygen of the air and also the hydrogen of the water combine with them, and carry them off in a state of acid gas.

A WONDERFUL INVENTION.—A correspondent of the *News*, writing from Austin on the 18th of January, thus notices a new invention:

"The great invention of the age is Gen. Chambers' terra-acqueous machine; it has been privately submitted to Committees of both branches of the Legislature, and I am credibly informed that it has been demonstrated to the entire satisfaction of all the members of both Committees, that the invention is a valuable one, and likely to create an entire revolution in the means of transportation. It is represented not to have any wheels, and not to slide, and yet, by some peculiar arrangement, will, on a graded road, make forty miles an hour. The road will be much wider than the rail track, but will require no iron, and possibly cost less than a double track. It will cross rivers or bays at the rate of ten miles per hour. This is a short description of a machine

applicable to both land and water. The inventor claims that thes ame principle may be applied to machines intended solely for water transportation, and that the speed of some twenty miles per hour may be obtained. The invention may seem too extravagant for credience, but as some men who have acknowledged mechanical skill, pronounce it a valuable invention, I deem it worthy of notice."

Patents Issued in 1855.—The whole number of patents issued in the year 1855 was 1,943. The number for additional improvements was 10, and the number of re-issues 49. The number for designs, included in the totals as above stated, 67. The "Pen and Lever" gives the residence of the parties to whom patents were issued during the year as follows:

New-York, 552; England, 15; Massachusetts, 304; France, 14; Pennsylvania, 237; Alabama, 13; Ohio, 133; Delaware, 8; Connecticut, 108; Tennesee, 8; New-Jersey, 82; Mississippi, 8; New-Hampshire, 47; Missouri, 8; Virginia, 45; Iowa, 7; Illinois, 45; South Carolina, 6; Indiana, 37; Georgia, 6; Maryland, 34; California, 5; District of Columbia, 33; Texas, 5; Vermont, 33; Florida, 4; Michigan, 29; North Carolina, 3; Rhode Island, 26; Canada, 3; Maine, 24; Prussia, 3; Kentucky, 23; Arkansas, 1; Louisiana, 17; Belgium, 1; Wisconsin, 15; Germany, 1.

Large Suspension Bridge.—A new suspension bridge is to be built across the Monongahela, from the point to Jones' Ferry, at Pittsburg. The bridge is thirteen hundred and fifty feet long, and consists of two suspensions supported by piers at each end, and one in the river. The first suspension is 900 feet long—and the second 450 feet. The bridge at its culminating point is 112 feet from the water, as required by the Supreme Court in the Wheeling bridge case. The estimated cost of the bridge is $400,000.

Light-House.—A revolving light for coast towers has been on exhibition recently in New-York which promises to supersede all the old lights. It is supplied by gas instead of oil; revolves in such a manner as to indicate, by its flashes, the number of the tower, and consequently its position; and its shadow may be seen, it is said, to the distance of twenty or more miles. If not too complicated for general use, it must prove a valuable improvement, as well as an ingenious invention in the matter of light-houses.

Improved Plane Iron.—Mr. H. Harris of N. Y., has invented an improved plane iron. In this improvement the cutting iron is placed inside of a thin piece of metallic case, open at both ends. This case with its cutter, is wedged into the plane in the common manner. The cutter is moved up and down within the case by means of a set screw. The thickness of the shaving is adjusted with the utmost facility, all that is required being simply to turn the screw.

Irish Agriculture.—A correspondent of the *London Times*, in commenting upon the progress of Irish agriculture, states that during the past fourteen years the value of farm stock in Ireland has increased from £22,000,000 to £35,000,000 sterling, and that the number of horned cattle has risen from 2,000,000 to 3,250,000, while the quality has correspondingly improved. Still, however, of the 20,000,000 of acres which Ireland comprises, only about one-fourth is under direct tillage, and fully one-third in pasture.

GEORGIA AND HER RAILROADS.—Georgia is nearly checquered by railroads, and yet she stands before the world with a debt only of two millions six hundred and forty-four thousand two hundred and twenty-one dollars against her on the balance sheet. No other State in the Union can point to the same amount of works of internal improvement, and show so small an indebtedness.—*Cotton Planter.*

THE aggregate assessed valuation of property in New-Orleans this year is $846,860 less than of the year 1854.

GUANO FOR GRASS LANDS.—We have recently conversed with two gentlemen—both practical men and of critical observation—who informed us that they have now fields in grass, and yielding good crops, laid down some five, six and seven years ago, manuring them solely with guano, and receiving little or no manuring since. If such were to be the general result, we might bring up our farms to a wonderful degree of fertility, because a third or half of the tillage land laid to grass with guano, and producing a fair crop for several years in succession, would enable us to appropriate all the manure of of the farm to the hoed crops. This would allow of very high manuring, and put the land in such condition as to produce heavy grass crops without the further application of guano. But we need further experiments, and test the guano upon its own merits, by putting the land into grass without a particle of any other manure.—*N. E. Farmer.*

ZINC ORE IN NEW-JERSEY.—The zinc ores of New-Jersey are believed to be the richest in the world. A single block of the red oxyde, weighing 16,400 lbs., obtained from the Sterling Hill mine, was exhibited at the London World's Fair, and surprised all who saw it. The American Zinc Manufacturing Company at Newark, N. J., which was established a few years since, promised to flourish; yet we have been informed that it has not been so successful as to compete with the Vielle Montague Company, at whose works the smelting is conducted with great skill. Its success, however, is simply a question of time, where the ore is rich and abundant and fuel plenty, as is the case in our country.—*Scientific American.*

CHEESE-MAKING.—A few months ago, I visited a lady friend in the country; her table was constantly supplied with most delicious cheese, of her own making. I asked as a particular favor, that she would communicate to me her peculiar method of making it, and wherein she differed from others. She replied that she followed the method that she had been taught generally, prepared the rennet in the same way, but felt sure that she had discovered the reason why cheeses were strong, both to the taste and smell, which consists in the single circumstance of putting the curd to press, *warm.* She did not use any artificial means to cool the curd, but after it had been chopped and scalded, allowed it to remain spread upon the cloth until it was as cool as the surrounding atmosphere, and thus put it to press.—*N. E. Farmer.*

JUICE OF THE WATER-MELON.—A correspondent of the *Prairie Farmer* presents the following method of using water-melons:

I endeavor, every year, to raise a good water-melon patch. They are a healthy and delightful fruit, I think. I cultivate the icing variety; plant early in May, and again towards the end of the month, so that they may come in

succession. When they commence ripening, we commence cutting, and use them freely during the hot weather. When the weather becomes cool in September, we haul a quantity of them to the house, split them open, with a spoon scrape out the pulps in a cullender, and strain the water into vessels. We boil it in an iron vessel, then put in apples or peaches, like making apple-butter, and boil slowly until the fruit is well cooked, then spice to taste, and you have something that most people will prefer to apple-butter or any kind of preserves. Or the syrup may be boiled without fruit, down to molasses, which will be found to be as fine as any sugar-house molasses. We have made in a fall as much as ten gallons of the apple-butter, if I may so call it; and molasses which has kept in fine condition until May.

Salt and Guano.—Recent experiments, as stated in the *Mark Lane Express*, go to show that common salt is a valuable addition to all applications of guano to the soil. It not only has a tendency to give strength and hardness to the straw, (which guano weakens,) but prevents the loss of ammonia, which is constantly going on even in a dry atmosphere. M. Barral, the editor of a French Agricultural journal, says: "We left in the open air, in plates, during 15 days, equal weights of the pure guano and the guano previously mixed with salt. At the end of that time we examined anew the amount of nitrogen, and found that the pure guano had lost 11.6 per cent. of its nitrogen, while that mixed with salt had only lost 5 per cent." The *Express* recommends the use of refuse salt from fish packers for this purpose, and any refuse salt would probably answer the purpose.

Wealth of Atlantic Cities.—The wealth concentrated at the great commercial points of the United States is truly astonishing. For instance, one-eight part of the entire property of this country is owned by the citizens of New-York and Boston. Boston alone in its corporate limits owns *one-twentieth* of the property of this entire Union, being an amount equal to the wealth of any three of the New-England States, except Massachusetts. In this city is found the richest community, *per capita*, of any in the United States. The next city in point of wealth, according to its population is Providence, R. I., which city is one of the richest in the Union, having a valuation of fifty-six millions, with a population of fifty thousand. The bare increase per annum of the wealth of Boston is equal to the entire valuation of many of the minor cities, such as Portland, Salem, New-Bedford, Buffalo, Chicago, Louisville, &c.

An Important Railroad Project.—The Oswego *Times and Journal* contains a full report of a meeting held in that city to secure the building of a railroad, six feet guage, from Oswego to Syracuse—35¼ miles. From Syracuse to Binghamton, on the New-York and Erie Railroad, there is a road already in operation, so that it needs but the building of 35¼ miles of road to connect Lake Ontario with New-York by a broad guage road, requiring no change of cars or transhipment of merchandise. At the meeting, speeches were made by the Hon. Daniel S. Dickinson and others, and the right kind of spirit seemed to prevail. The estimated cost of the road is $761,106. An able report was presented by W. B. Gilbert, Esq., showing the importance of the road and its relations to western commerce.

To Fix Carpets on Floors.—A correspondent in writing from Florence says:—"Here iron rings are fastened in the floors, when the carpets are laid,

and they have large hooks in the binding, for which these rings are eyes; so that there is no taking out and nailing in of tacks, and carpets are raised and laid as noiselessly and easily as bed covers.—*Family Herald.*

WHALE FISHERY.—From several sources we gather the following items in regard to the whale fishery, interesting to those who still burn oil in their lamps. The total number of vessels employed in 1855, was 585 ships and barques, 21 brigs and 20 schooners. Of the above vessels there is owned in the State of:

	Ships.	*Brigs.*	*Schs.*	*Tonnage.*
Massachusetts,	475	17	23	160,840
Rhode Island,	20			6,736
Connecticut,	50	3	6	21,067
New-York,	31	1		10,498
	585	21	29	199,141

The oil brought into the United States in 1855 by this fleet was 72,649 bbls. sperm, 184,015 bbls. whale oil, and 2,707,500 lbs. of whalebone. The prices have steadily increased; sperm being about $1 77 per gall., at wholesale, and whale 71 cts. In 1844, sperm oil was 63 cts. and whale oil 31 cts. per gallon.

A GREAT RAILWAY.—"The whole number of cars and locomotives on the Erie Railroad," says the *Newark Advertiser*, "is 3,168, which, if coupled together in one train, would reach a distance of twenty-one miles, and be able to carry 150,000 persons in one day from New-York to Lake Erie. The company has in its employ not less than 5,000 persons, whose pay, per month, is $125,000, or $1,500,000 per year. There are single miles on this road whose grading cost not less than $170,000 each; and one bridge near the villiage of Susquehanna, built upon seventeen stone arches, cost $320,000. The number of miles from Jersey City to Dunkirk, is 459, and is run over by the evening express train in sixteen hours. The company has in its service six printing presses, which are constantly at work printing tickets that are never used but once, blanks, &c."

OKRA.—This is another plant not yet extensively cultivated at the North, but which deserves a high popularity. It is much cultivated in the southern and middle States, chiefly as an addition to soups. Its long green pods, full of seeds, and abounding in mucus, form the chief ingredient in the famous "gumbo soup." It also makes an excellent stew, cooked as snap beans. The plant grows some six feet high, has a beautiful leaf and flower, and is worthy of its place in the garden for ornamental purposes. The flower resembles that of the cotton plant.

The seed should be sown in drills, two and-a-half to three feet apart, early in May. Thin out the young plants to six inches apart, and hoe frequenly, to secure rapid growth. The pods are only good in the green state, when full of mucilage. We last year secured seeds of this plant, from the Gaboon River, in Africa. They came up well, and matured perfectly. The pod is much shorter and thicker than the variety in common use. The seeds when perfectly ripe, are said to make an excellent coffee, burnt and ground like the berries of the coffee plant. All who affect soups should give the Orka a place in their vegetable garden. The plant needs no forcing, is hardy, and is grown as easily as sweet corn.—*Am. Agriculturist.*

NEW BOOKS.

LIBRARY OF STANDARD LETTERS. Vol. 1. LETTERS OF MADAME DE SÉVIGNÉ. One volume, 12mo. New-York: Mason Brothers. Edited by Mrs. Sarah J. Hale.

This volume is the first of a series which certainly commences well. A volume of letters written by so distinguished a lady cannot fail to contain much that is valuable in history, and which can be found nowhere else. It is the filling in of which history is the woof. The plan is most excellent, and this first volume is worthy of extensive patronage.

LIBRARY OF STANDARD LETTERS. Vol. 2. LETTEES OF LADY MARY WORTLEY MONTAGUE. In one vol., 12mo, 408 pages. New-York: Mason Brothers.

This volume, edited by Mrs. Sarah J. Hale, is the second of the series, the first of which we have just described. The present issue follows the text of the edition published by her great grandson, Lord Wharncliffe, as the best authority. In this, no doubt, the editor has done wisely, and the public may place confidence in the general accuracy and originality of the letters of this eminent woman; and they are certainly very entertaining. The work is well executed by the enterprising publishers.

THE MECHANIC'S, MACHINIST'S AND ENGINEER'S PRACTICAL BOOK OF REFERENCE, AND ENGINEER'S FIELD BOOK. By CHAS. HASLETT, Civil Engineer. Edited by Chas. W. Hackley, Professor of Mathematics in Columbia College, N. Y. New-York: Stringer & Townsend. 1856.

This book accidentally has laid over a month, but this will do no harm. It will bear the extended examination without injury. It is a wonderful condensation of all sorts of valuable tables, on the subjects suggested by the title, with rules, problems, formulas, with various estimates, etc., which "will excite surprise at their number, novelty and value to every one." It is done up in pocket-book style, and on thin paper, and is very well executed.

THE SUFFERING SAVIOR; or, Meditations on the Last Days of Christ. By F. W. KRUMMACHER, D.D. Gould & Lincoln, Boston. 12mo, 474 pages.

This learned divine is distinguished for his richness of ideas and his graceful style. This volume is highly evangelical. It exhibits in an eminent degree the peculiar genius of the author which is German, and not English or American, but it loses none of its interest from its national characteristics.

THE UNITED STATES RAILROAD DIRECTORY, FOR 1856. Compiled by BENJAMIN HOMANS. To be continued annually. B. Homans, 163 Pearl street, New-York. pp. 211.

Mr. Homans has placed in our hands a handsome volume of the 8vo size, containing the lists of officers in the numerous railroad companies of this country. An alphabetical list of all the railroads of the country—more than 500 in number—is annexed. It is next to impossible to avoid all mistakes and omissions in a new work like this, but it will be found exceedingly convenient for reference, and well worth a place in many an office and counting-room. Mr. H. proposes to add many useful chapters to future volumes.

THE FLOWER GARDEN; OR, BRECK'S BOOK OF FLOWERS. Boston: J. P. Jewett & Co. 1856.

This is an enlarged and improved edition of what we have before noticed. Mr. Breck has added many new flowers and shrubs, and has a chapter on Parlor Plants.

More than fifty pages have been added to the work, making it the most complete and practical work on that subject.

BIBLIOTHECA SACRA FOR APRIL. E. A. PARK and S. H. TAYLOR, Editors. Andover, Mass.: W. F. Draper.

Our readers need not be informed of the high rank which this quarterly holds among the religious and literary journals of this country. Whatever may be said of the doctrines it inculcates, or the soundness of its opinions on the great questions in ethics which it discusses, for talent and learning it unquestionably stands at the head of the list of journals of that description. The editors are assisted by many of the ablest writers in the country. $3 00 a year, *if paid in advance;* 225 pages in each number.

PETER GOTT, THE CAPE COD FISHERMAN. By J. REYNOLDS, M.D. Boston: J. P. Jewett & Co. 1856. 280 pages, 12mo.

This is a plain, unpretending narrative of a fisherman's life, showing his perils and hardships. It seems to be a history of real life. Mr. Gott was a prisoner in Dartmoor prison during the war of the revolution The book is very handsomely got up.

Both these volumes are for sale by Sheldon, Lamport & Co., New-York.

NEW MUSIC.

"The Blind Orphan Boy," a ballad, by J. Wood.

"The Footsteps of Angels." Poetry by Prof. Longfellow, music by Emma Harding.

"Bird's Complaint." A song by Benjamin Jepson.

"Beyond the River," song by Jno. H. Pixley.

"Rose of Mississippi," waltz by S. Markstein.

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25 cents single. Six pieces sent by mail, free of postage, for one dollar. Horace Waters, publisher, 333 Broadway.

Among the splendid pieces recently published by Wm. Hall & Son, we notice "Rayons" and "Ombres," ballades, by Gottschalk,—one of a series under the name of "La Serenade." It is very beautiful.

GENERAL AGENCY.

WE proffer our services as General Agent to the readers of our journal, for the transaction of any business they may commit to our care. We will purchase seeds, tools, implements, plants, trees, musical instruments, etc., etc., and forward promptly. Books will be forwarded to any given address, postage paid, on the receipt of the published retail price. Schools, Sabbath-schools, etc., will be supplied with libraries. We will forward printed lists of any publisher that may be ordered, if a postage stamp is enclosed to us. Teachers also will be furnished.

PATENTS.—We especially offer our services in making drafts of machines and securing patents for any new invention.

Address, M. P. PARISH,
Office of *The Plough, the Loom, and the Anvil.*

List of Patents Issued

FROM TERMINATION OF PREVIOUS LIST TO APRIL 8.

Vincent Barnes, of Washington, improvement in railroad car brakes.

La Fayette Blair, of Bainsville, O., improved hot blast furnace.

Wm. Butler, of Little Falls, N. Y., improvement in valves for lock gates.

Wm. L. Carter, Marietta, Pa., improved ore washer.

Jno. H. Cheever, Boston, improvement in the manufacture of India rubber belting or banding.

Clinton W. Clapp, Nappinger's Falls, N. Y., improved bench clamp.

Edwin B. Clement and Silas G. Willie, Barnet, Vt., for improvement in washing machines.

Charles Davenport, Watertown, Mass., improved apparatus for heating buildings by steam.

Henry R. David, N. Y., improvement in sewing machines.

Nancy Davy, executrix of Edward Davy, deceased, late of Crediton, England, improvement in machinery for preparing hemp and flax. Patented in England Nov. 13, 1852.

Robert D. Dwyer, Richmond, Va., improved apparatus for preventing horses in carriages from falling.

R. Eickemeyer, Yonkers, improvement in parallel rulers.

Francois Garein, Phildelphia, improvement in preparation of tallow for making candles.

Peter C. Guion, Cincinnati, improvement in spark conductors for locomotive trains.

R. Gould, Whitewater, Wis., improvement in tanning.

Henry Hays, Quincy, Ill., improvement in carriage tops.

Samuel A. Kinsman and Samuel Field, Barre, Mass., improvement in machinery for ironing hats.

Israel S. Love, Beloit, Wis., improvement in harvest cutters.

Horatio N. Macomber, Lynn, Mass, improved spirit blow pipe.

Jacob. J. Mann, Westville, Ind., improvement in mowing machines.

Jno. C. Morris, Cincinnati, improved method of bending wood.

Frederick Newbury, Albany, improvement in revolving fire arms.

Henry Nycum, Uniontown, Pa., improvement in carriage hubs.

Leonard Phleger, Tamapqua, improvement in steam boilers.

Benj. T. Roney, Philadelphia, improvement in grain and grass harvesters.

Edwin P. Russell, Manlius, improvement in straw cutters.

Job Sands, Sand's Mills, N. Y., improvement in limekilns.

Richard Savery, Steubenville, Ohio, improvements in puddling iron.

Theodore Sharp, North Greenbush, improved method of straining mulley saws.

Wm. F. Shaw, Boston, improvement in apparatus for heating or cooking by gas.

Alfred E. Smith, Bronxville, improved boxes for axles.

George N. Stearns, Syracuse, mortising and boring machine.

Mathias Soverel, Orange, N. Y., improved mode of securing thills to axles.

Abraham Steers, Medina, improvement in apparatus for making extracts.

Robert L. Stevens, Hoboken, improvement in means for reducing the friction of slide valves in steam engines.

Wm. Mt. Storm, New-York, improvement in revolving fire arms.

Henry D. Stover and Jas. W. Bicknell, Boston, machine for cutting irregular forms.

Pliny Thayer, Lansingburg, improvement in harvester cutters.

John B. Thomas, Cincinnati, improved plane stock.

Erastus Tracy, Troy, improved wrench.

A. F. and C. M. H. Warren, Brooklyn, fountain pen.

Wm. Wells and Mellin Bray, Turner, Me., improved machine for cutting out and "skiving" the soles of boots and shoes, and also for cutting the "rands" therein.

Edwin Wright, Philadelphia, improved dovetailing machine.

Abner Whitley, Springfield, O., improvements in grain and grass harvesting.

Moses Woodbury, Boston, improved faucet.

Elisha Pratt, Salem, assignor through others to himself and Thos. P. Pengree, of same place, improvement in leather splitting machines.

Chas. C. Reed, Philadelphia, assignor to himself, Wm. S. Reinert, and Jacob Schnell, of same place, improvement in manufacture of umbrella ribs.

Lorenzo Stratton, Feltonville, Mass., assignor to himself and Luther Hill, Stoneham, Mass., improvement in the manufacture of boot and shoe soles.

Wm. C. Watson, New-York, assignor to Ira W. Gregory, of same place, improvement in sewing machines.

Chas. Schmidt, Union, Me., improved method of boxing carriage wheels.

Homer Anderson, of Garrattsville, N. Y., for improvement in welding steel.

Lewis C. Ashley, of Troy, N. Y., for improved bench plane.

James B. Blake, of Worcester, Mass., for improved apparatus for roasting and broiling by gas.

Samuel Blackwell, of Middlesex county, England, for improved dumb jocky, the cross and saddle tree being made out of gutta percha. Patented in England March 9, 1853.

Charles Brahomite, of New-York, N. Y., for improvement in hermetically sealing preserve cans.

John Broils, of Madison county, Ala., for improvement in hernial trusses.

Thomas D. Burrall, of Geneva, N. Y., for improvement in grain and grass harvesters.

Wm. Butler, of Little Falls, N. Y., for improvement in making chiled castings.

Thomas Cope, of Detroit, Mich., for improved carriage coupling.

Hiram Clarke, of Princeton, Mass., for improvement in thrashing machines.

Samuel Comfort, Jr.. of Morrisville, Pa., for improvement in mowing machines.

Henry N. DeGraw, of Piermont, N. Y., for improvement in machines for corking bottles.

Calvin Dodge, of Pittsburg, Pa., for improvement in fire-places.

Eliakim R. Forbush, of Buffalo, N. Y., for improvement in grain and grass harvesters.

Jacob Frick, of Philadelphia, Pa., for improvement in feed and blow-off apparatus for steam boilers.

John German and C. B. Hoyt, of Oriskany Falls, N. Y., for improvement in seeding machines.

R. Gleason, Jr., of Dorchester, Mass., for improved inkstands.

Robert Griffiths, of Alleghany City, Pa., for improved nut machine.

Horace L. Hervey, of Quincy, Ill., for improvement in harvester cutters.

A. C. Hitchcock and C. H. Amidon, of Greenfield, Mass., for improved moritising tool.

Daniel L. Hurlbut, of Utica, N. Y., for improved arrangement of rotary plaining knives.

Joshua K. Ingalls, of Brooklyn, N. Y., for improved illuminating grating.

Edward R. Kernan, of Pittsburg, Pa., for improvement in processes for making transparent window shades.

Lucius Leavenworth, of Freemansburg, N. Y., for improvement in churns.

A. Lempche, of Pleasant Mount, Pa., for improved self-regulating wind wheel.

Jno. Lippincott, of Philadelphia, Pa., for improvement in percussion projectiles.

James B. Mabury, of Jeffersonville, Ind., for improvement in stoves.

Ebenezer Mathers, of Morgantown, Va., for improved machine for felling trees.

John McCrone, of Thompsonville, Conn., for improvement in cone tubes for winding frames.

Richard McMullin, of New-Brunswick, N. J., for improvement in process for making elastic rubber cloth.

Elijah Morgan, of Morgantown, Va., for improvement in seed planters.

Geo. W. Parker, of Fitzwilliam, N. H., for improved machine for making clothes pins.

Merritt Peckham, of Utica, N. Y., for improvement in sectional fire pots for stoves and furnaces.

David R. Perkenpine, of Philadelphia, Pa., for improvement in boxes of railroad car axles.

Nathan Post, of East Cleveland, O., for improvement in harness bucklirs.

James Rodgers, of New-York, N. Y., for imment in omnibus registers.

Chas. A. Schults, of Chicago, Ill., for improvement in machine for sawing marble in taper form.

Phillip Schwikardt, of Brooklyn, N. Y., for mode of producing designs on wood.

John R. Sees, of New-York, N. Y., for improvement in adjusting the brasses connecting rods.

Lambert Alexander, New-York, improvement in propelling vessels.

Gustav. A. Blitthowski and Frederick Hoffman, N, Y., improvement in needle guns.

Charles H. Key, Baltimore, Administrator of Simon F. Blunt, deceased, in detaching boats from their tackle.

Adolph and Felix Brown, New-York, machine for cutting loaf sugar.

Ambrose E. Burnside, Bristol, R. I.,improvement in breech-loading fire-arms.

Abraham Coats, New-York, improvement in regulating the flow of oil to the wick in Carcel lamps.

Geo. H. Corlis and Elisha Harris, Providence, improvement in presses for punching.

Charles W. Davis, Newark, improvement in fruit or grain dryers.

Josephus Echols, Columbus, Ga., improvement in stone drilling machine.

Calvin Fletcher, Cincinnati, Ohio, improvement in paddle wheels.

John S. Gallagher, Jr., Washington, improvement in water coolers and filters.

Jesse Gilman, Nashua, improved lath machine.

Stephen J. Gold, New-Haven, improvement in steam radiator clocks.

Halvor Halvorson, Boston, assignor to F. R. Slocum and Robert Watkinson, Hartford, Conn. improved miniature case.

J. H. Hoard, Providence, improved pile driver.

Wm. W. Hubbell, Philadelphia, improvement in explosive shells.

William Jenks, Alexandria, improvement in hand corn-planters.

Charles Jones, Brooklyn, improvement in ash sifters.

Konrad Keller, N. Y., improvement in fan rocking chairs.

Charles H. Lewis, Malden, Mass., improvement in spring platform for railroad cars.

N. Murphy Lowe, Boston, improved piano-forte action.

Axrel S. Lyman, New-York, improved method of cooling and ventilating rooms, etc.,

J. W. Mahan, Lexington, Ill., improved carpenter's bench.

Jos. Miller, Boston, machine for sweeping streets.

Edwin P. Monroe, Charlestown, Mass., improvement in gun locks.

Henry R. and James L. Plimpton, Hamden Co., Mass., improvement in wardrobes, bedsteads combined with other furniture.

Lucius Paige, Cavendish, Vt., improvement in the levers of railroad car brakes.

Horatio O. Perry, Buffalo, improved valve motion for oscillating engines.

Cyrus Roberts and John Cox, New-Hope, Va., improvement in grain separators.

J. B. Reyman, Salem, Ind., field fence.

James Rowe, Tampa Bay, portable field fences.

J. M. Sampson, Waynesville Ill., improved post driver.

Albert Spencer, New-York, improvement in machines for sizing hat bodies.

Solon Staples, Bath, Me., improved clamp for planking ships.

O. M. Stillman and Stephen Wilcox, Jr., Westerly, improvements in steam boilers.

Jno. Stull, Philadelphia, improvement in syringe bottles for medical agents.

Andrew J. Sweeney, Wheeling, water meter.

Wm. Thomas, New-York, improved cock for steam, water, &c.

Wm. H. Towers, Philadelphia, improvement in "creepers" to prevent slipping on ice, &c.

Wm. Warwick, Pittsburg, improvement in wrenches.

A. W. Washburn, Yazoo City, improvement in cotton seed planters.

James H. Bennett, Bennington, Vt., improved butter workers.

Samuel Beaumont, New-York, self-setting rat trap.

John A. Bailey, Detroit, improvement in machines for sawing marble in obelisk form.

Micajah Crenshaw, Springfield, Texas, improved cultivating plow.

Samuel Green, Lynn, improvement in tools for figuring morocco.

John Haselton, Goffstown, N. H., water wheel.

Isacchar A. Heald, Springfield, Mass., improvement in machines for sawing marble in obelisk form.

Philip Scrag, Washington, D. C., improved mold for earthen vessels, pots, &c.

D. H. Thompson, Fitchburg, Mass., improvement in machines for raking and loading hay.

A. W. Washburn, Yazoo City, improvement in cotton hillers.

A. W. Washburn, Yazoo City, improvement in cotton scrapers.

Abner Whitney, Springfield, O., improvement in grain and grass harvesters.

Justus Webster, Boston, and Samuel H. Folsom, Lowell, improved printing cylinder.

Thos. C. Bell, Walpole, assignor to Nathaniel Sampson, Shelburne, Mass., improvement in scythe fastening.

Jno. H. Manny, Rockford, assignor to Peter H. Watson, Washington, D. C., improvement in harvester cutters.

Henry. S. Hopkins, Providence, assignor to himself, Benj. W. Hendrick, East Greenwich, and Joseph C. Peckham, Providence, improvement in means for regulating variable cut-offs for steam engines.

Halsey D. Walcott, Pawtucket, assignor to himself and Milton E. Walcott, same place, improvement in wrenches.

Richard Hunt, Freeport, Ill., improvement in horsepower.

Nathan Ames, of Saugus, Mass., for improved self-inking stamps.

Edward J. Baker, of Baltimore, Md., for lubricator.

Ben. G. Ball, of Nashua, N. H. for improved bench vice.

Wm. F. Brooks, New-York, N. Y., for improvement in making seamless metal tubes.

John W. Brown, of Mt. Savage Iron works, Md., for improvement in rolling railway bars.

Samuel Comfort, Jr., of Morrisville, Pa., for improved apparatus for removing grains from harvesters.

Hezekiah Conant, of Hartford, Conn., for improvement in breech-loading fire-arms.

F. D. Dumpfel, of Philadelphia, Pa., for improvement in steam boilers.

Augustus Elliott, of San Francisco, Cal., for improvement in grain harvesters.

Henry English, of Baltimore, Md., for improved hydrant.

George F. Folsom, of Roxbury, Mass., for improved printing press.

Wm. Fuzzard, of Charlestown, Mass., for improvement in cloths for felting hat bodies and other articles.

William P. Gage, of Saratoga Springs, N. Y., for improvement in journal box for railroad car axles.

Geo. G. Griswold, of Chester, Conn., for improved method of manufacturing augers.

Jas. Harrison, Jr., of Milwaukie, Wis., for improvement in automatic steam whistles in locomotives.

Albert V. Hill, of Hinsdale, N. Y., for improvement in slide rests.

Edward Joslin, of Keene, N. H., for improved mortising machine.

George W. La Baw, of Jersey City, N. J., for improved life boat.

Vincent D. Lent, of Chelsea, Mass., for improved form for spiral springs.

Stimmel Lutz, of Philadelphia, Pa., for improvement in spark arresters.

Robert Maffett, of Bradford, Pa., for improvement in method of converting reciprocating into rotary motion.

J. W. Mahan, of Lexington, Ill., for improved mitering bench.

Thomas E. Marable, of Petersburg, Va., for improved machine for gathering seeds or grain in the field.

Philip McManus, of Brunswick, N. Y., for improvement in wrenches.

Francis Peabody, of Salem, Mass., for improved wind wheels.

Asahel Pierpont, of New-Haven, Conn., for improvement in soldering wire ferrules.

Calvin A. Richardson, of Waterloo, Me., for instrument for stirring straw and husk beds.

Wm Rodgers and Abraham Bannon, of Bellefonte, Pa., for improvement in forge fires.

John R. Lees, of New-York, N. Y., for improvemethod of varying the stroke of feeding pump for steam engines.

John Sitton, of Williamston, S. C., for improved wheelright machine.

H. C. Spalding, of New-York, N. Y., for improved lathe.

Ezra M. Stratton, of New-York, N. Y., for improvement in axle boxes for carriages.

Wm. Stephens, of Pittston, Pa., for improvement in valve gear of oscillating engines.

S. J. Tufts, of Maineville, Ohio, for improved field fence.

George W. N. Yost, of Pittsburg, Pa., for improvement in grain and grass harvesters.

Alvin Barton, of Syracuse, N. Y., assignor to himself, A. R. Morgan and J. M. Parsons, of same place, for improvement in door springs.

George W. O. Huygens, of St. Louis, Mo., assignor to himself, Chas. Benden, and D. F. Tiedemann, of same place, for improvement in bridges.

John R. Harrington, of Dayton, Ohio, for machine for making carpet lining.

Ferdinand Klein, of Newark, N. J., for improved skates.

Wooster Smith, of South Thomaston, Me., for fishing lead.

Designs.—Nicholas Muller, of New-York, N. Y. for design for clock case fronts.

Samuel H. Ransom, of Albany, N. Y., for design for six plate stoves.

Samuel H. Ransom, of Albany, N. Y., for design for parlor stoves.

Samuel H. Ransom, of Albany, N. Y., for design for stove plates.

Samuel H. Ransom, of Albany, N. Y., for design for cooking stoves.

Samuel H. Ransom, of Albany, N. Y., for design for elevated oven cooking stoves.

Stephen V. Appleby, of New-York, N. Y., for improvement in machines for drying wet grain, &c.

Aaron Arnold, of Troy, N. Y., for improvement in inclosing propeller shafts in keels.

E. B. Bigelow, of Boston, Mass., for improvement in looms.

John Plant and Chas. G. Ball, of Washington, D. C., for improvement in cooking ranges.

Edward J. Baker, of Baltimore, Md., for improved waste attachments to hydrants.

Jason Barton, of Middle Haddam, Conn., for improvement in pressure bells.

G. H. Lindner, of Hoboken, N. J., for improvement in door fasteners.

Nathan Berham, of Hartford, Conn., for improvement in fastening door knobs.

George E. Burt, of Harvard, Mass., for improved machine for combing seed off broom corn.

George Buckel and Edward Dorch, of Monroe, Mich., for improvement in shot guns.

Calvin Carpenter, Jr., of Providence, R. I., for improvement in magneto-electric machines.

Thomas Crane, of Fort Atkinson, Wis., for improvement in rotary pumps.

John J. Crooks, of New-York, N. Y., for improved sash fastener.

Robert B. Fellows, of Shelburne Falls, Mass., for improved tempering furnace.

Geo. W. Flanders, of Lynn, Mass, for improved flood gate.

Orlando V. Florey, of Yellow Springs, O., for improved vise.

A. W. Fox, of Athens, Pa., for improved machine for planting felloes.

Wm. S. Gale, of New-York, N. Y., for improvement in piston valves for steam boiler regulators.

Wm. P. Gamble, of Philadelphia, Pa., for improvement in machines for polishing leather.

Wm. Greenleaf, of Greenfield, Ohio, improvement in carriage coupling.

Charles M. Gould and Charles B. Lamp, of Worcester, Mass., for improvement in sub-marine lanterns.

Samuel Harris, of Springfield, Mass., for improvement in machine for sifting coal and other articles.

Augustus A. Hayes, of Boston, Mass., assignor to Geo. Ashman and Charles Phelps, of Springfield, Mass., for improvement in process for extracting oil from cotton seed.

Wm. M. Henderson, of Baltimore, Md., for improved arrangement of slide valves and means for operating them.

Liveras Hall, of Charlestown, Mass., for improved machine for tapering whalebone for whip handles.

Henry W. Hunt, of Peeksville, N. Y., and John Sands, of Greenwich, Conn., for improvement in machines for mixing lime and sand for mortar.

Robert T. Knight, of Philadelphia, Pa., for improvement in the construction of envelopes.

Wm. Murer, of New-York, for improvement in locks.

Earl Parker and Wm. Reynolds, of East Hartford, Conn., for Automatic thermohydro-elaio pheumatic valve.

Andrew Patterson, of Pittsburgh, Pa., for improvement in door locks.

Sanford S. Perry, of the county of Charles City, Va., for improvement in charring wood.

H. H. Smith, of Cincinnati, O., for improved governor valve for steam engines.

P. H. Wait, of Sandy Hill, N. Y., for improvement in the felt guide of paper of machines.

Edward Whiteley, of Boston, Mass., for improvement in boilers for cooking by steam.

Anson Walcott, of East Bloomfield, N. Y., for improved method of treating surface springs.

Edwin Young, of Philadelphia, Pa., for improved slate frame.

Wm. W. Cotton, of New-York, N. Y., for machine for making envelopes.

Jacob W. Goodwin and Moses C. Hawkins, of Edinborough, Pa., for improved method of regulating pumps, by wind wheels,

John D. Heaton, of Dixon, Ill., for improved arrangement of valves for hydraulic engines.

Chas. Harrison, of New-York, N. Y., for basin cocks.

Jesse Lincoln, of Uniontown, Pa., for improvement in machines for sowing seed broad cast.

E. P. Lacey, of Rochester, N. Y., for improvement in corn planters.

Michael Nickermann, of Pittsburg, Pa., for chuck for lathes.

Robert G. Pine, Sing Sing, N. Y., for improved machine for polishing buckles.

Martin Snow, of North Bridgewater, Mass., for improved spoke shave.

Edward J. Updegraff, of York, Pa., for improved machine for bending wood.

Jno. Demarest, of Mott Haven, N. Y., asignor to "The J. L. Mott Iron Works," of same place for improved core bar for pipe moulding.

Royal Hatch, of Stafford, Vt., assignor to Henry C. Hatch, of same place, for improvement in wash boards.

Julius Bevin, of Unadilla Forks, N. Y., assignor to himself and Samuel N. Stillman of same place, for improvement in boxes for axles.

R. M. Evans, of Laconia, N. H., assignor to himself and Chas. S. Gale, of same place, for improvement in railroad car brake.

Thomas Priestly, of Saxonville, Mass., assignor to Daniel Holden, of same place, for improvement in oil cans.

John Sawyer, of Fitchburgh, Mass., assignor to himself and Thomas Hale, of same place, for improved apparatus for heating and ventilating buildings.

Wm. H. Low, of Albany, N. Y., for machines for making envelopes.

John P. Sherwood, of Fort Edward, N. Y., for improvement in nail plate feeding machines.

Alva B. Taylor, of Newark, N. J., for improvement in machinery for making hat bodies.

William P. Thomas, of Hillsboro, Ind., for improvement in harness for shoeing horses.

Isaac Van Bunschoten, of New-York, N. Y., for improvement in Argand lamps for burning rosin oil.

Israel W. Ward, of Birmingham, Pa., for improved adjustment in boring machines. Antedated Feb. 16, 1856.

Hiram Wells, of Florence, Mass., for improved method of suspending circular saw spindles.

Geo. Wellman, of Lowell, Mass., for improvement in stripping top flats of carding machines. Patented in England November 25, 1853.

Liman Wight, of Benton, Pa., for improvement in spinning wheels.

James H. Wilson, Jr., of Nashville, Tenn., for safety apparatus to be applied to harnesses and thrills of vehicles.